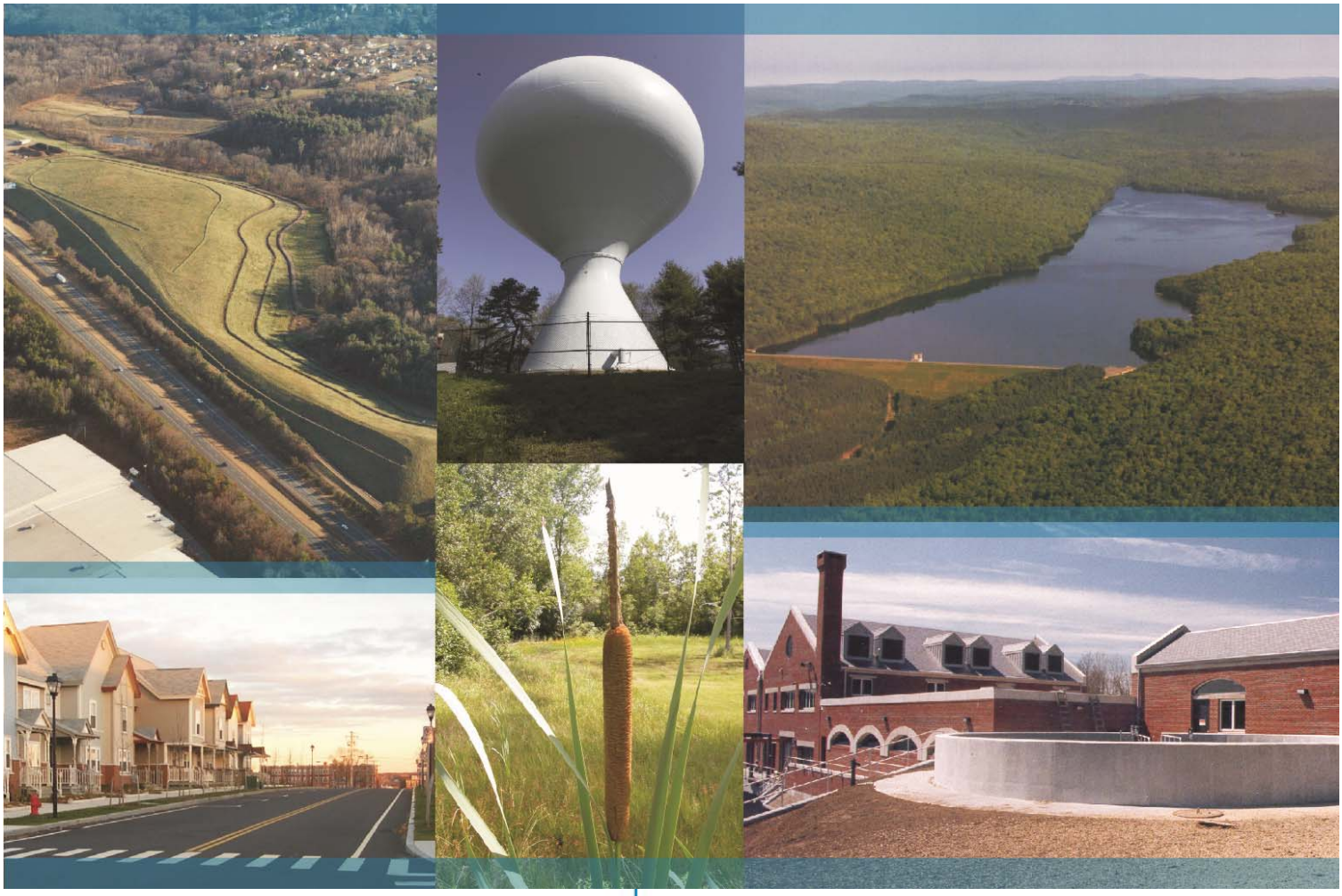

Tighe&Bond

General Permit for the Discharge of Stormwater from Separate Municipal Storm Sewer Systems

Annual Report 2016

Prepared For:

Town of Darien

August 30, 2017

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Appendices

Section 1
Public Education and Outreach

1.1 Regulatory Requirements

1.1.1 Federal Regulatory Requirement

> **40 CFR 122.34 (b)(1)** – Implement a public education program to distribute educational materials to the community of contact, equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in the stormwater runoff.

1.1.2 Connecticut DEEP General Permit

> **Throughout the MS4**
>
> (i) implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff.

1.2 Current Programs

The Town has undertaken the following measures in 2016 to address the Public Education and Outreach measure:

1.2.1 Municipal Website

The Town's existing stormwater policy is entitled "Town of Darien Stormwater Management and Drainage Manual". The Town has a link to this document on their website, located at:

http://www.darienct.gov/filestorage/28565/28567/29165/29167/2003_Darien_Drainage_Manual.pdf

The Town also has a link on their website to inform residents on specific stormwater recommendations, including:

- Don't dump engine oil down drains or gullies; recycle it at 126 Ledge Road.
- Wash your car on the lawn or at an approved car wash facility.
- Don't put garden refuse or grass clippings down stormwater drains or into local waterways or bush land – make compost.

This link is located at:
http://www.darienct.gov/filestorage/28565/28567/29165/29167/publicservicestormwaterquality.pdf

1.2.2 Town Plan of Conservation and Development

The Town's 2016 Plan of Conservation and Development went into effect on June 19, 2016.

This plan focuses on all aspects of Town conservation and development, including development, traffic, parking, open space, and infrastructure needs. Section 6 of the plan

focuses on the management of coastal resources, with recommendations on protecting coastal waters from pollution and educating residents on the importance of protecting these resources. Section 7 focuses on the protection of natural resources, with recommendations to implement low impact development (LID) practices and the adoption of a septic management ordinance. It also recommends educating residents on the importance of LID and protecting water quality. Section 14 deals with the management of utility infrastructure, with one focus being the improvement of the storm drainage system and encouraging on-site stormwater detention for new development. Finally, Section 15 focuses on the promotion of sustainability and resiliency within the Town.

The plan recommends reviewing the Town's Drainage Manual for possible incorporation of LID stormwater management standards from the Connecticut Water Quality Manual or other sources.

The link to the Town's Plan of Conservation and Development is below, and selected excerpts from the Plan related to stormwater management are included in **Appendix A**:

http://www.darienct.gov/filestorage/28565/28567/28890/29006/POCD_ALL_061016_RFS.pdf

1.2.3 Five Mile River Watershed Based Plan

The Town of Darien, along with the Town of New Canaan and the City of Norwalk, are part of the Five Mile River Watershed Plan, signed by the chief elected officials of each municipality in 2012. The watershed-wide goals of the Plan are to:

1. Enhance stormwater management,
2. Improve water quality,
3. Protect and enhance wildlife habitat, and
4. Increase awareness and stewardship across the watershed.

Chapter 8 of the watershed plan addresses Education & Outreach specifically.

The full Plan is included in **Appendix B**., and can also be accessed at the following:

https://westcog.org/wp-content/uploads/2015/09/WatershedFiveMilePlanWBP_Final_Reduced.pdf

1.2.4 Five Mile River Commission

The Town of Darien's Five Mile River Commission is a state agency with regulatory jurisdiction over the navigation, pollution, and conservation of the River and its drainage basin. There are two representatives each from the Town of Darien and the City of Norwalk. In 2016, the Commission held discussions on future implementation of environmental monitoring, especially as it related to algal growth in the River.

The 2016 Annual Report for the Commission is available in **Appendix C**, and can also be accessed at the following:

http://www.darienct.gov/filestorage/28565/28567/29451/29459/29465/FMRC_Annual_Report_2016.pdf

1.2.5 Environmental Protection Commission

The Town of Darien's Environmental Protection Commission (EPC) is both the Town's Inland Wetlands Commission and the Town's advisory Conservation Commission. As the Conservation Commission, the EPC's mandate is to protect, preserve, and maintain the Town's natural resources. The Commission is proactive in educating residents on the benefits of natural resource protection.

In 2016, the EPC continued to review proposed projects in or abutting wetlands or watercourses. In July 2016, they shared a press release advising residents not to deposit lawn clippings or leaves in any wetlands or watercourses. The press release is available in **Appendix D**, and can also be accessed at the following:

1.2.6 Stormwater Brochure

The Town Department of Public Works (DPW) distributes the brochure After the Storm: A Citizen's Guide to Understanding Stormwater, describing stormwater runoff, why stormwater runoff is a problem, and the possible effects of stormwater pollution. The brochure is at the front desks of various Town land use departments.

A copy of the brochure is available in **Appendix E**.

Section 2
Public Involvement and Participation

2.1 Regulatory Requirements

2.1.1 Federal Regulatory Requirement

40 CFR 122.34 (b)(2) At a minimum, comply with state, tribal, and local public notice requirements when implementing a public involvement/participation program.

2.1.2 Connecticut DEEP General Permit

Throughout the MS4:

(i) Comply with State and local public notice and Freedom of Information requirements when implementing a public involvement/participation program. Where notice requirements are inconsistent, the notice provisions providing for the most notice and opportunity for public comment shall be followed.

(ii) Develop a public involvement/participation program that includes the public in developing, implementing, and reviewing your stormwater management program.

2.2 Current Programs

The Town has undertaken the following measures in 2016 to address the Public Involvement and Participation Measure:

2.2.1 Town Cleanups

The Town is aware of the consequences of trash and wastes on its natural and aesthetic resources and in response encourages volunteer groups to participate in clean-up activities. The Town held its annual spring cleanup on April 23, 2016, hosted by the Darien Beautification Commission and Chamber of Commerce, focusing on the exits/entrances if I-95, parks, and beaches.

An article in the Darien Times about the spring cleanup is located here: http://www.darientimes.com/66157/town-wide-annual-spring-clean-up-returning-this-month/

The Darien Department of Public Works also conducted its an annual Christmas tree pick-up program for residents; an article in the Darien Times about the pickup is located here: http://www.darientimes.com/79895/town-of-dariens-public-works-schedules-christmas-tree-pickup-by-area/

2.2.2 Bulk Pickup Program

The Darien Department of Public Works hosted its annual bulk pickup program in the spring, for items that are too large for transport by a passenger car or SUV. Residents can discard items such as mattresses, white goods, appliances, and furniture.

An article in the Darien Times about the bulk pickup program is located here: http://www.darientimes.com/63946/dariens-bulk-pick-up-program-to-resume-in-this-spring/

2.2.3 Hazardous Waste Collection Day

The Town of Darien held its annual hazardous waste collection day for residents at the Noroton Heights train station. Items that were able to be collected included antifreeze, transmission fluid, brake fluid, insecticides, weed killers, driveway sealer, art and hobby supplies, artist paints, photo chemicals, household cleaners, lighter fluid, and rubber cement.

A Darien Times article on the 2016 Collection Day is located here: http://www.darientimes.com/69490/darien-to-hold-hazardous-waste-collection-day-saturday/

2.2.4 Recycling Program

The Town's Recycling Center is located at 126 Ledge Road. Darien has a single stream recycling program that they implemented throughout 2016. A brochure of single stream recycling guidelines is available to residents on the Town website, located here: http://www.darienct.gov/filestorage/28565/31353/35935/35939/Single_Stream_Recycling_01292013.pdf

The Recycling Center also maintains a Facebook page to educate residents about its recycling program, upcoming events, and tips for reducing household waste: https://www.facebook.com/DarienRecyclingCenter/

The Town of Darien also has a year-round paint recycling station at its refuse and recycling center. Starting in 2015, the Town also recycles mattress and box spring bedding, provided that the items were used in the State of Connecticut. The News Release on the Mattress and Box Spring Recycling Program is available here: http://www.darienct.gov/filestorage/28565/28567/29165/29202/Mattress_News_Release_052015.pdf

The Town's Swap Shop at the Recycling Center opened in 2009, and is for items that are in repairable condition, removing still-useful items out of the waste stream. The website for the Swap Shop is located here: http://greendarien.org/darien-swap-shop/

2.2.5 Pet Waste Disposal

The Darien Parks and Recreation Commission has established rules and regulations that prohibit the pollution of park facilities and/or receiving waters. The Town has also installed pet waste collection bags, dispensers, and waste receptacles throughout the parks system.

The Town's Parks and Recreations Rules and Regulations are included in **Appendix F.**

2.2.6 Friends of Selleck's Woods Cleanup

Friends of Selleck's Woods is an organization that helps preserve Selleck's Woods on behalf of the Darien Parks and Recreation Commission. This group held a trail fix/public cleanup of the park on April 24, 2016, in conjunction with the Darien Land Trust A link to the group's website is maintained here:

http://selleckswoods.com/

2.2.7 Darien Environmental Group

The Darien Environmental Group was founded in 1990 as a volunteer organization aimed at educating residents about ways in which they can change their consumer and lifestyle habits to benefit the environment. The group offers several educational programs to elementary school children, and has overseen several recycling programs including plastics, batteries and electronics. It has also distributed reusable shopping bags to Town residents. The Town maintains a link to the group's website on the Town website:

http://www.darienenvironmentalgroup.org/

2.2.8 Soundwaters/Friends of Holly Pond

Soundwaters is an educational group whose mission is to protect Long Island Sound through education and action. One of the subsidiaries of Soundwaters is "Friends of Holly Pond", which focuses on protecting the waters of this coastal inlet on the border of Stamford and Darien. The group's Holly Pond webpage is located here:

https://soundwaters.org/hollypond/

2.2.9 Friends of Gorham's Pond

Friends of Gorham's Pond is a group of concerned citizens who are committed to preserving and protecting the Gorham's Pond watershed. This group hosts cleanup projects and works with the Town on improvements to the watershed. They celebrated alongside state and local representatives as the Town of Darien hosted a ribbon cutting ceremony to commemorate the completion of a dam restoration and sediment dredging project at Goodwives River on October 21, 2016. wThe group's website can be accessed at:

http://friendsofgorhamspond.org/

2.2.10 Recycling Center Tours

The Town of Darien DPW and the Darien Recycling Committee conducts annual tours in the fall for all third graders in the Town school system. These tours focus on explaining how the transfer station operations, how recycling works, how much garbage is recycled annually, the benefits of recycling, and why it is important to the environment.

Section 3
Illicit Discharge Detection and Elimination

3.1 Regulatory Requirements

3.1.1 Federal Regulatory Requirement

40 CFR 122.34 (b)(3) - Develop, implement, and enforce a program to detect and eliminate illicit discharges into your small MS4. Develop a storm sewer system map, showing the location of all outfalls and the names and locations of all water of the U.S. that receive discharges from those outfalls. To the extent allowable under state, tribal or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into your storm sewer system and implement appropriate enforcement procedures and actions. Develop and implement a plan to detect and address non-storm water discharges including illegal dumping to your system. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. Address categories listed in 122.34(b)(3)(D)(iii) if you determine they are significant contributors of pollutants to MS4.

3.1.2 Connecticut DEEP General Permit

Required throughout the MS4:

(i) implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater discharges, except as provided in Section 3(a)(2), into the MS4, as well as sanctions to ensure compliance, to the extent allowable under state or local law.

(ii) inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

Required within the Urbanized Area:

(i) develop a map or series of maps at a minimum scale of 1"=2,000' and maximum scale of 1"=100' showing all stormwater discharges from a pipe or conduit with a diameter of 18" or greater (or equivalent cross-sectional area) operated by the MS4. For each discharge the following information shall be included:

a. Type, material, and size of conveyance, outfall or channelized flow (e.g. 24" concrete pipe);

b. The name of the immediate surface waterbody or wetland to which the stormwater runoff discharges;

c. If the outfall does not discharge directly to a named waterbody, the name of the nearest named waterbody to which the outfall eventually discharges;

d. The name of the watershed in which the discharge is located.

(ii) develop, implement and enforce a program to detect and eliminate existing illicit discharges, as defined in 40 CFR 122.26(b)(2), into the MS4;

(iii) develop and implement a plan to detect and address future non-stormwater discharges, including illegal dumping, to the MS4;

(iv) address the following categories of non-stormwater discharges or flows (i.e., illicit discharges) only if the municipality or the Commissioner identify them as significant contributors of pollutants to the MS4: water lien flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and street wash water (discharges or flows from fire fighting activities are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as significant sources of pollutants to waters of the United States.

3.2 Current Programs

The Town has undertaken the following measures in 2016 to address the Illicit Discharge Detection and Elimination Measure:

3.2.1 Zoning Regulations

The Town of Darien's Zoning Regulations, implemented throughout 2016, include the following stormwater-specific regulations:

(a) "No application shall be approved until the [Planning and Zoning] Commission shall be satisfied that proper provision shall be made to control… storm water runoff, including protection of watercourses, streams, ponds, and wetlands."
(b) "Excavation, fill, or grading shall not… cause any negative effects on storm water drainage, especially as it may impact adjacent properties."
(c) For any proposed development over ½ acre, a Soil Erosion and Sediment Control Plan will need to be submitted with any application. The plan must contain provisions to "reduce the danger from storm water runoff on the proposed site based on the best available technology."

The Town's Stormwater Management Policy and Section 880 of the Town Zoning Regulations are intended to improve stormwater management and give reasonable consideration to the restoration and protection of the ecosystem and habitat of Long Island Sound by requiring the management of stormwater runoff in a manner that mitigates impacts to water quality." They are included in this Annual Report at **Appendix G**.

3.2.2 Field Identification of Illicit Connections

The Town does not allow non-stormwater discharges into storm sewer systems that it owns and maintains. Town policy requires action by the Town for discharges of this type that are discovered. Town Highway staff is trained that when identifying a non-stormwater discharge, the source of the discharge shall be determined, and if found to be beyond or outside the Town's system, the owner of the property is notified.

As part of routine maintenance work on the Town stormwater drainage system, Town employees engaged in the cleaning of catch basins are instructed to completed an inspection form, where any suspect discharges should be noted. If such discharges are

discovered, an engineering aide is dispatched to the field to locate the source of the discharge. A copy of the inspection form is included in **Appendix H.**

In a similar fashion, an engineering aide is sent into the field to track down the source of any suspect discharge reported the DPW (or other Town Departments) by residents.

3.2.3 Town Stormwater Mapping

The Town maintains a hand-drawn master drawing showing location of pipes, inlets, outlets, and pipe diameters that is available for the public to view in the Department of Public Works.

The Town has begun integrating this information into a GIS-based map, currently for internal use only.

3.2.4 Illicit Discharge Detection and Elimination Program

The Town conducted stormwater sampling in 2016.

Samples were collected from discharges resulting from a storm event greater than 0.1 inch in magnitude and occurring at least 72 hours after any previous storm event of 0.1 inch or greater. Runoff events resulting from snow or ice melt were not used to meet the minimum annual monitoring requirements. Grab samples were used for all monitoring Grab samples were collected during the first (6) hours of a storm event discharge. A field sample of pH, turbidity and conductivity will be taken at the site.

The following information was collected for the storm events monitored:

- Date
- Water temperature
- Time of start of the discharge
- Date of sampling
- Magnitude (in inches) of the storm event samples
- Date of Previous Storm Event

Pollutant parameters were tested according to methods prescribed in Title 40, CFR, Part 136 (1990). Testing of these parameters was at certified laboratories. The parameters tested at each discharge point included:

- pH (SU) (Taken with field equipment)
- Hardness (mg/L)
- Conductivity (µmos) (Taken with field equipment)
- Oil and grease (mg/L)
- Chemical Oxygen Demand (mg/L)
- Turbidity (ntu) (Taken with field equipment)
- Total Suspended Solids (mg/L)
- Total Phosphorous (mg/L)
- Ammonia (mg/L)
- Total Kjeldahl Nitrogen (mg/L)

- Nitrate plus Nitrite Nitrogen (mg/L)
- E. coli (col/100mL)
- In addition to this list of parameters, uncontaminated rainfall pH was measured at the time the runoff sample is taken (Taken with field equipment)

The Town sampled six (6) outfalls: one from a commercial area, and five from residential areas. The sampling report forms are included in **Appendix I**. No unusual results were detected.

There were no reports of illicit discharges made to the Town.

Section 4
Construction Site Stormwater Runoff Controls

4.1 Regulatory Requirements

4.1.1 Federal Regulatory Requirement

40 CFR 122.34 (b)(4) - Develop, implement and enforce a program to reduce pollutants in any storm water runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Program must include: the development and implementation of (at a minimum) an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, requirements for construction site operators to implement appropriated erosion and sediment control BMPs, requirements for construction site operators to control waste at the construction site, procedures for site plan review which incorporate consideration of potential water quality impacts, procedures for receipt and consideration of information submitted by the public.

4.1.2 Connecticut DEEP General Permit

Required throughout the MS4

(i) develop, implement, and enforce a program, or modify an existing program to reduce pollutants in any stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The program shall include, but not be limited to, the development and implementation of:

a. an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions for non-compliance, to the extent allowable under State or local law;

b. procedures for notifying construction site developers and operators of the requirements for registration under the General Permit for Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities;

c. requirements for construction site operators to implement appropriate erosion and sediment control best management practices in accordance with the Guidelines;

d. requirements for construction site operators to control waste at the site such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste that may cause adverse impacts to water quality;

e. procedures for site plan review which incorporate consideration of potential water quality impacts;

f. procedures for receipt and consideration of information submitted by the public; and

g. procedures for site inspection and enforcement of control measures.

4.2 Current Programs

The Town has undertaken the following measures in 2016 to address the Construction Site Stormwater Runoff Controls:

4.2.1 Requirements and Guidelines for Sediment and Erosion Control

Article VIII, Section 870 of Darien's Zoning Regulations (Soil Erosion and Sediment Control) requires that a soil erosion and sediment control plan be submitted with any application for development that will disturb more than one-half acre of land area. These regulations were updated based on the Connecticut Guidelines for Soil Erosion and Sediment Control (2002), provide for control of accelerated erosion and sedimentation and reduce stormwater runoff from new developments. A copy of Article VIII: Environmental and Related Regulations of the Zoning regulations in included in **Appendix G**.

4.2.2 Site Developers and Operators of Requirements for Sediment and Erosion Controls

Town Planning and Zoning Regulations require the following:

- Sediment and Erosion Control Permitting Process – Procedure requires the applicant to submit a plan detailing sediment and erosion control for any project disturbing over ½ acre of land. Plan becomes a condition of the issued permit.
- Scheduled Department Inspections/Site Monitoring – Applicant must contact the Planning and Zoning Commission prior to commencement of development activity. Sediment and erosion control measures are inspected by the Planning and Zoning Commission on a periodic basis.
- Enforcement Proceedings – The Planning and Zoning Commission, through the Town's Zoning Regulations, is authorized to bring enforcement actions against parties who violate provisions of the Sediment and Erosion Control Permit.

Town Inland Wetland and Watercourses Regulations require the following:

- All permits issued by the Town of Darien Environmental Protection Commission contain a general provision that requires all permit holders to take steps necessary to control stormwater discharges and prevent erosion and sedimentation and to otherwise prevent pollution of wetlands and watercourses.
- Following the issuance of a permit, town staff conducts routine inspections and as warranted requires enhancements to the erosion and sedimentation controls.

The Town's Inland Wetland Regulations are included as **Appendix J**.

4.2.3 On-Site Waste Controls

In accordance with the Town of Darien's Planning and Zoning Regulations, Inland Wetland and Watercourses Regulations and DPW Road Opening permit requirements, building materials and other construction site wastes including discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site, shall be properly managed and disposed of to reduce the risk of pollution from materials such as surplus or refuse building materials or hazardous wastes. Practices such as trash disposal, recycling, proper material handling, and spill prevention and cleanup measures can reduce

the potential for stormwater runoff to mobilize construction site wastes and contaminate surface or groundwater.

The operators of the site are required to control the above-mentioned waste by contract specifications, and all pertinent local, state and federal regulations.

The following are examples of steps that the Town typically requires to ensure proper storage and disposal of construction site wastes:

Waste Collection

Designate a waste collection area onsite that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody.

- Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible.
- Schedule waste collection to prevent the containers from overfilling.
- Clean up spills immediately. For hazardous materials, follow cleanup instructions on the package. Use an absorbent material such as sawdust or cat litter to contain the spill. Reporting, handling, and disposal of all hazardous material shall be in accordance with all state and federal regulations.
- During the demolition phase of construction, provide extra containers and schedule more frequent pick-ups.
- Collect, remove, and dispose of all construction site wastes at authorized disposal areas. The CT DEEP can be contacted to identify these disposal sites.

Contaminated / Hazardous Materials

Private contractors shall dispose of materials as solid waste in accordance with all applicable federal, state and local regulations. Excavation, transporting, stockpiling, securing, disposal of contaminated/hazardous materials and decontamination of equipment will include but not be limited to the following:

- Environmental Health and Safety
- Contaminated/Hazardous Materials Excavation
- Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area
- Disposal of Hazardous Waste
- Environmental Work – Solidification
- Disposal of Contaminated Railroad Ties
- Controlled Materials Handling
- Disposal of Contaminated Timber Piles

- Disposal of Controlled Materials
- Management of Reusable Controlled Material
- Abandonment of Wells
- Handling and Disposal of Contaminated Concrete
- Handling Contaminated Groundwater

Pesticides

The following practices are required to reduce risks associated with pesticides or to reduce the amount of pesticides that come in contact with stormwater. To the extent pesticides are being used by the town, the subsequent practices will be followed:

- Follow all federal, state and local regulations that apply to the use, handling or disposal of pesticides
- Do not handle the materials any more than necessary
- Store pesticides in a dry, covered area.
- Construct curbs or dikes to contain pesticides in case of spillage.
- Follow the recommended application rates and methods
- Have equipment and absorbent materials available in areas where pesticides are stored and used in order to contain and clean up any spills that occur.

Further, town staff inspections are used to monitor/encourage responsible use of pesticides on private property.

Petroleum

The following management practices should be followed to reduce the contamination risk associated with petroleum products:

- Store petroleum products and fuel for vehicles in covered areas with dikes in place to contain any spills.
- Immediately contain and clean up any spills with absorbent materials.
- Have equipment available in fuel storage areas and in vehicles to contain and clean up any spills that occur.

Fertilizers

Phosphorous-containing and nitrogen-containing fertilizers are used on construction sites to provide nutrients necessary for plant growth, and are found in detergents used in vehicle cleaning areas. Excess of these nutrients can be a major source of water pollution. Management practices the Town encourages to reduce risks of nutrient pollution may include the following:

- Apply fertilizers at the minimum rate and to the minimum area needed.
- Work the fertilizer deeply into the soil to reduce exposure of nutrients to stormwater runoff.
- Ensure that erosion and sediment controls are in place to prevent fertilizers and sediments from being transported off-site.
- Use detergents only as recommended, and limit their use on-site. Wash water containing detergents should not be dumped into the storm drain system. It should be directed to a sanitary sewer or otherwise contained so that it can be treated at a wastewater treatment plant.

Maintenance Considerations

Equipment or containers that may malfunction and cause leaks or spills are to be identified through regular inspection or storage and use areas. Owners shall inspect equipment and containers regularly for leaks, corrosion, support, or foundation failure, or any other signs of deterioration and should be tested for soundness. Any equipment or containers found to be defective shall be repaired or replaced immediately.

4.2.4 Procedures for Site Plan Review

Procedures for site plan review that incorporate consideration of potential water quality impacts are utilized by the Town. Construction plans and specifications are reviewed by the Town departments for conformance to the Town's requirements relating to construction site runoff control.

Town Planning and Zoning

All development activity must comply with the Zoning Regulations of the Town of Darien and, unless otherwise specified, all development activity is subject to the submittal of a site plan and the issuance of a Zoning Permit. Such required measures include:

- *Soil Erosion and Sedimentation Plan* – The applicant shall submit a Soil Erosion and Sedimentation Plan to the Planning and Zoning Department prepared in accordance with the Connecticut Guidelines with the Standards for Soil Erosion and Sediment Control, as amended. (see language in **Appendix G**) Unless otherwise stated, no development activity shall commence until a Soil Erosion and Sedimentation Permit has been issued and execution of the Soil Erosion and Sedimentation Plan has been field-verified by representatives of the Planning and Zoning Department. The Town, by way of its Zoning Regulations, maintains the authority to pursue corrective action to insure adherence with the approved plan.
- *Stormwater Management* – Any development activity requiring the submittal of a site plan shall, as part of the proposal, include a storm water management plan. Said plan shall be depicted on or accompany a site plan. A storm water management system shall be sized in accordance with the Town's stormwater policy in the Zoning Regulations (See **Appendix G**). The storm water management plan shall be prepared by and possess the original seal of a Connecticut-licensed professional engineer.

- *Environmental Considerations* – The development of the site shall conserve as much of the natural terrain and existing vegetation as possible. Disturbance to steep slopes, wetlands, other land features that potentially impact the quality of storm water discharge shall be avoided, whenever possible.

- *Bond/Insurance Requirements* – Upon approval of an application and prior to issuance of a permit, The Planning and Zoning Department through its Environmental Protection Commission may require the submittal of a bond in an amount and in a form approved by the Agency. Planning and Zoning also has the right to require an applicant to certify that it has public liability insurance against liability which might result from the proposed operation or use of the wetlands or watercourses covering any damage which might occur within 2 years of the completion of operations.

4.2.4.1 Town Planning and Zoning

All development activity must comply with the Zoning Regulations of the Town of Darien, and unless otherwise specified, all development activity is subject to the submittal of a site plan and the issuance of a Zoning permit. Such required measures include:

- *Soil Erosion and Sedimentation Plan* – When the proposed disturbed area of development is cumulatively more than one half acre, the applicant shall submit a Soil Erosion and Sedimentation Plan to the Planning and Zoning Department prepared in accordance with the 2002 Connecticut Guidelines with the Standards for Soil Erosion and Sediment Control, as amended. Unless otherwise stated, no development activity shall commence until a Soil Erosion and Sedimentation Permit has been issued and execution of the Soil Erosion and Sedimentation Plan has been field-verified by representatives of the Planning and Zoning Department. The Town, by way of its Zoning Regulations, maintains the authority to pursue corrective action so as to insure adherence with the approved plan.
- *Stormwater Management* – Any development activity that meets one of the following requirements:
    - Construction of 1,000 square feet or more of impervious surface;
    - Demolition and reconstruction or replacement of an existing residential dwelling; or
    - Submission of any application subject to review and action by the Planning and Zoning Commission if the activity is within the jurisdiction of that Commission and/or by the Environmental Protection Commission (EPC) if the activity is within the jurisdiction of the EPC

  shall, as part of the proposal, include a stormwater management plan. Said plan must be in conformance with the technical guidance and procedures in the Town of Darien Department of Public Works Stormwater Management and Drainage Manual, and shall be depicted on or accompany a complete set of construction plans. The stormwater management plan shall be prepared by and possess the original seal of a Connecticut-licensed professional engineer. The design of the stormwater drainage systems shall be such as to minimize soil erosion and maximize absorption of pollutants by the soil. Runoff from impervious areas shall be attenuated to reduce peak flow volume and sediment loads to pre-development levels.
- *Environmental Considerations* – The development of the site shall conserve as much of the natural terrain and vegetation as possible. Disturbance to steep slopes,

wetlands, and other land features that potentially impact the quality of stormwater discharge shall be avoided, whenever possible. The general landscaping of the site shall comply with the purpose and intent of Section 940 (Landscaping, Screening, and Buffer Areas); existing trees shall be preserved to the maximum extent possible; refuse containers shall be enclosed. All utility systems shall be suitably located, adequately designed, and properly installed to serve the proposes uses, and to protect the environment from adverse air, water, or land pollution.

- *Bond Requirements* – The Planning and Zoning Department may require, as a condition of approval, that the applicant post a pond with surety satisfactory to the Commission in order to assure conformance with all proposed improvements (excluding buildings) shown on the approved Site Plan.

4.2.4.2 Long-Term Maintenance Plans

Maintenance of drainage facilities and systems constructed or modified as part of a proposed development is the responsibility of the property owner, unless otherwise dedicated to, or the acknowledged responsibility of, a government agency or other entity.

Prior to obtaining a Zoning Permit and/or starting work on a project, an O&M Plan or Notice of Drainage Maintenance Plan shall be recorded on the Darien Land Records. The O&M plan either filed in the Land Records or referred to by the Notice of Drainage Maintenance Plan shall stipulate the inspection frequency, maintenance requirements, and intervals for all proposed stormwater management practices on site.

Section 5 Post-Construction Stormwater Management in New Development and Redevelopment

5.1 Regulatory Requirements

5.1.1 Federal Regulatory Requirement

40 CFR 122.34 (b)(5) – Develop, implement and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects that are less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for your community. Use an ordinance or other regulatory mechanism to address post-construction runoff. Ensure adequate long-term operation and maintenance of BMPs.

5.1.2 Connecticut DEEP General Permit

Required throughout the MS4

(i) develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4 or directly to waters of the State. This program shall ensure that controls are in place that will prevent or minimize water quality impacts;

(ii) develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for your community;

(iii) use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law;

(iv) ensure adequate long-term operation and maintenance of BMPs.

5.2 Current Programs

The Town has undertaken the following measures in 2016 to address the Post-Construction Stormwater Management in New Development and Redevelopment Measure:

5.2.1 Requirements for Structural and Non-Structural BMPs

The Public Works Department provides stormwater management advisory reviews to the Planning and Zoning Commission for most land use applications. Stormwater BMPs are required, and evaluated on a project-specific basis, subject to the requirements of the Town's Stormwater and Drainage Manual, as amended.

5.2.2 Required Maintenance of Private Facilities

Section 880 of the Planning and Zoning regulations, as shown in **Appendix G**, requires owners to maintain their stormwater treatment practices so that they do not become nuisances. The Town also requires the submission of an operations and maintenance plan or notice of drainage maintenance plan for each system; the required contents of the plan include inspection frequency, maintenance requirements, and intervals for proposed stormwater management practices at the site.

5.2.3 Regulatory Review

Article VIII, Section 870 of Darien's Zoning Regulations (Soil Erosion and Sediment Control) requires that a soil erosion and sediment control plan be submitted with any application for development that will disturb more than one-half acre of land area. These regulations were updated based on the Connecticut Guidelines for Soil Erosion and Sediment Control (2002), provide for control of accelerated erosion and sedimentation and reduce stormwater runoff from new developments. A copy of Article VIII: Environmental and Related Regulations of the Zoning regulations in included in **Appendix G**.

Additionally, the Town continues to enforce the Stormwater Management requirements included in Section 880 of the Town Zoning Regulations. All projects require some form of stormwater management. The intent of this policy is to better manage proposed connections to the Town's stormwater management system and to improve stormwater quality while achieving reductions in stormwater runoff quantity.

5.2.4 Low Impact Development Practices

The Darien Plan of Conservation and Development (POCD), updated in 2016, includes provisions which encourage the use of low-impact development practices. The Plan is included in **Appendix A**. Specifically, the POCD states that "protecting water quality can be furthered by… reducing the amount of effective impervious coverage (road widths, size of parking stalls, number of parking spaces, etc.) to reduce pollutants and allow for the use of some areas for implementing "low impact development" (LID) practices."

Section 6
Pollution Prevention / Good Housekeeping

6.1 Regulatory Requirements

6.1.1 Federal Regulatory Requirements

40 CFR 122.34 (b)(6) – Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

6.1.2 Connecticut DEEP General Permit

Required throughout the MS4

(i) develop and implement an operation and maintenance program that includes a training component for municipal employees and contractors and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations;

(ii) using training materials that are available from the EPA, the State or other organizations, this program shall include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building system maintenance, new construction and land disturbances, and stormwater system maintenance;

(iii) develop and implement a program to sweep all streets at least once a year as soon as possible after snowmelt;

(iv) develop and implement a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once a year;

(v) develop and implement a program to evaluate, and if necessary, prioritize for repairing, retrofitting or upgrading the conveyances, structures and outfalls of the MS4

Required within the Urbanized Area

(i) develop and implement a program to sweep all streets at least twice a year, the first of which shall be as soon as possible after snowmelt and the second to be conducted not less than 90 days following the first;

(ii) develop and implement a program to clean catch basins and other stormwater structures that accumulate sediment at least once a year as soon as possible after snowmelt.

6.2 Best Management Practices

The Town has undertaken the following measures in 2016 to address the Pollution Prevention/Good Housekeeping Measure:

6.2.1 Employee Training

The Town's existing continuing education employee training program has basic stormwater management components. The Town is in the process of expanding the scope of this training and developing a formal training program.

This program will provide personnel with an understanding of the Department's stormwater management plan, including best management practices (BMPs), processes and materials with which they are working, safety hazards, practices for preventing discharges, and procedures for responding quickly and properly to toxic and hazardous material incidents. They will also be informed of the proper procedures for reporting and documenting any potential pollutants discovered.

The program will consist of scheduled training for its design, construction, maintenance and facility personnel, including both office and field positions. Topics will include sedimentation and erosion control, permanent BMPs, and permit requirements. Training will also be implemented for employees working for other Town departments operating and maintaining facilities located on property owned by the Town.

6.2.2 Infrastructure Repair, Rehabilitation, and Retrofit

The Town undertook several storm sewer improvement projects throughout Town to repair deficient pipes, and where catch basins were replaced, they were replaced with basins with improved sumps.

For example, the Abbey Road drainage project upgraded undersized storm drains, and included additional water quality features, such as sumps and a stabilized riprap outlet.

The Town also dredged the upper pond which is the headwaters to Gorham's Pond, therefore increasing the storage attenuation capacity of the pond and restoring some of the natural and beneficial floodplain functions.

6.2.3 Operation and Maintenance Program

The development of an Operation and Maintenance program is an integral component of effective stormwater management. This measure is intended to improve the efficiency of stormwater management programs through appropriate maintenance practices, internal procedures, and scheduling. Proper development and implementation of these programs reduces the risk of water quality problems. There are several elements that are essential for the success of an operation and maintenance program, including training, record keeping, internal reporting, and preventative maintenance. The Town includes the following elements in the development and implementation for their program:

- *Employee Training* – The Town provides informal education to its employees regarding stormwater management and how it relates to the department's design, construction, and maintenance operations. This education focuses on pollution prevention, best management practices, and good housekeeping. Town staff are aware of the Town's policies on illicit discharge inspection, general maintenance,

preventative maintenance, and other topics relating to proper stormwater management.

- *Internal Reporting* – Internal reporting provides a framework for "chain of command" reporting of stormwater management issues, and is an essential part of any good records keeping program. When properly employed, an internal reporting program can clearly define an individual's roles and responsibilities for implementing and maintaining the stormwater pollution prevention program, thereby making it easier to prevent and contain potential stormwater contamination.

  The Town's internal reporting procedures incorporate the additional effort needed with this stormwater management program, and the position(s) responsible for each stormwater management task. Stormwater problems identified in the field are relayed from the maintainer (field personnel) to crew leader, then the immediate supervisor, and then the Town Engineer. This reporting procedures will be formalized by the Town in the future.
- *Preventative Maintenance Program* – Preventative maintenance is utilized by the Public Works Department for eliminating potential problems associated with drainage systems, facilities, and equipment. These measures are intended to reduce the frequency and quantity of pollutants that are discharged to waterbodies as a result of the failure and deterioration of aging systems. Preventative measures utilized by the Department include the following:
  - Catch basin inspection during routine maintenance
  - Drainage system inspection for new construction/reconstruction projects

6.2.4 Street Sweeping

The Town currently subcontracts street sweeping services, to remove sediment buildup and large debris from curb gutters.

The Town conducts sweeping of all Town-owned streets once a year to minimize pollutant export to state and local waterbodies. This cleaning practice removes sediment, large debris, and other pollutants from curb gutters, roadways, parking lots, and facility services, which are a potential source of pollution impacting state and local waterbodies.

Every Town-owned road in Darien was swept in the spring of 2016. In the more heavily used downtown area of Darien, the streets were swept three times in 2016.

6.2.5 Catch Basin Maintenance

Catch basins fitted with sumps are intended to retain coarse sediment by trapping this material in a chamber or low area below the invert of the outlet pipe. By trapping the sediment, the catch basin prevents solids from clogging the storm sewer and being washed into receiving waters. Catch basins must be cleaned to maintain their ability to trap sediment, and consequently their ability to prevent flooding. The removal of sediment, decaying debris, and highly polluted water from catch basins has both aesthetic and water quality benefits. These include reducing foul odors, reducing suspended solids, and reducing the load of oxygen-demanding substances that reach receiving waters.

- The Town has developed a catch basin maintenance program that consists of inspecting and cleaning catch basins in critical areas on a yearly basis. Additional catch basins in other areas are cleaned as manpower/funds permit, with a goal of cleaning all catch basins in the system at least once per year.
- As catch basins are inspected and cleaned, the cleaning is tracked on a paper reporting form.

- Every catch basin in the Town's drainage system was cleaned at least once in 2016.

6.2.6 Leaf Pickup Program

The Town of Darien conducted a leaf pickup program in October and November 2016 for all public streets in Town. Leaves were picked up if they were bagged with 100% biodegradable bags, and only if those bags contained leaves. Residents were instructed to pile leaves from their property at the curb for morning pickup. Town crews then proceed to pick up all leaves and dispose of them properly. This program helps to minimize the buildup of leaves in roadways and within catch basins (see Section 6.2.6), helping to minimize impacts on the overall quality of stormwater runoff.

A Darien Times article on the 2016 leaf pickup program can be found here:
http://www.darientimes.com/76415/town-of-darien-releases-leaf-pick-up-schedule/

6.2.7 Town Vehicle Maintenance

All Town of Darien vehicles are washed at a commercial car wash facility where feasible (applies to passenger cars/pickup trucks that can fit). Larger vehicles are washed at the Town garage. The Town has developed plans for a wash facility building to be installed at the DPW garage. Construction should be completed by 2017.

6.2.8 Town Stormwater Policy

The town continues to require applicants to conform to Section 880 of the Darien Zoning Regulations, Stormwater Management. These regulations represent the Towns' policies regarding the protection of stormwater runoff. This policy requires that documentation be provided showing no increase in downstream flooding conditions for the 2, 10, 25, and 50 year storms on properties proximate to the site, and no adverse cumulative impact downstream due to any proposed development. A copy of the Stormwater Management section is included in **Appendix G**.

6.2.9 Abbey Road Storm Drainage

In December 2015, the Town began construction of the Abbey Road Storm Drainage improvement project. This project includes the replacement of several older catch basins with new catch basins with appropriately sized sumps (both size and depth).

The drainage portion of the project was completed in January 2017.

6.2.10 Goodwives River Improvements

The Town of Darien implemented a dam and fish ladder project on the Goodwives Rivera, at the headwaters of Gorham's Pond. The project began in 2015, and was completed by October 2016. A reconstructed dam, measuring 85 feet, was installed along with a fish ladder and eel run, and contractors then cleared out over 800 tons of sediment from the pond. This project was a longtime goal of the Friends of Gorham's Pond (see BMP 2.2.9 above).

A Darien Times article on the project completion can be found here:
http://www.darientimes.com/76218/darien-to-celebrate-completion-of-goodwives-river-dam-project-friday/

Section 7
Additional Information

7.1 Proposed New BMPs

Please refer to the Town's 2017 MS4 Plan for BMPs to be undertaken from 2017 forward.

7.2 BMPs Not Implemented

BMPs not implemented include the establishment of an illicit discharge ordinance. This is included as a BMP in the 2017 Plan.

Additionally, the Town no longer uses cable access television to display messages and run content, since the audience was very small, and the measure was deemed to have lost its effectiveness.

7.3 Impaired Waters

CTDEEP has identified certain watercourses it has assessed as impaired because they do not meet minimum water quality standards for certain designated used. Table 7-1 lists watercourses within Darien that CTDEEP has identified as impaired under Section 303(d).

Table 7-1
303(d) Impaired Waterbodies in Darien

Watercourse	Location	Miles	Description
Noroton River – 01	From Post Road (Route 1) crossing (saltwater limit at head of Holly Pond), US to southwestern corner of St. John's Cemetery (river bend to west), Stamford/Darien town border.	2.3	Impaired Designated Use: Habitat for Fish, Other Aquatic Life and Wildlife Cause: Unknown Potential Source: Stormwater, industrial discharges, illicit discharges, remediation sites, groundwater impacts.
Noroton River – 02	From southwestern corner of St. John's Cemetery (river bend to west), Stamford/Darien town border, US to Merritt Parkway (Route 15) corssing (US of Raymonds Pond), New Canaan.	2.61	Impaired Designated Use: Habitat for Fish, Other Aquatic Life, and Wildlife Cause: Unknown Potential Source: Stormwater, industrial discharges, remediation sites, groundwater impacts.

BMPs implemented in 2016 which targeted impaired waters include:

2.2.1 Town Cleanups

Included waterfront locations.

3.2.2 Field Identification of Illicit Connections

Will minimize future impairment of these waters.

6.2.2 Infrastructure Repair, Rehabilitation and Retrofits

7.4 Stormwater Monitoring Results

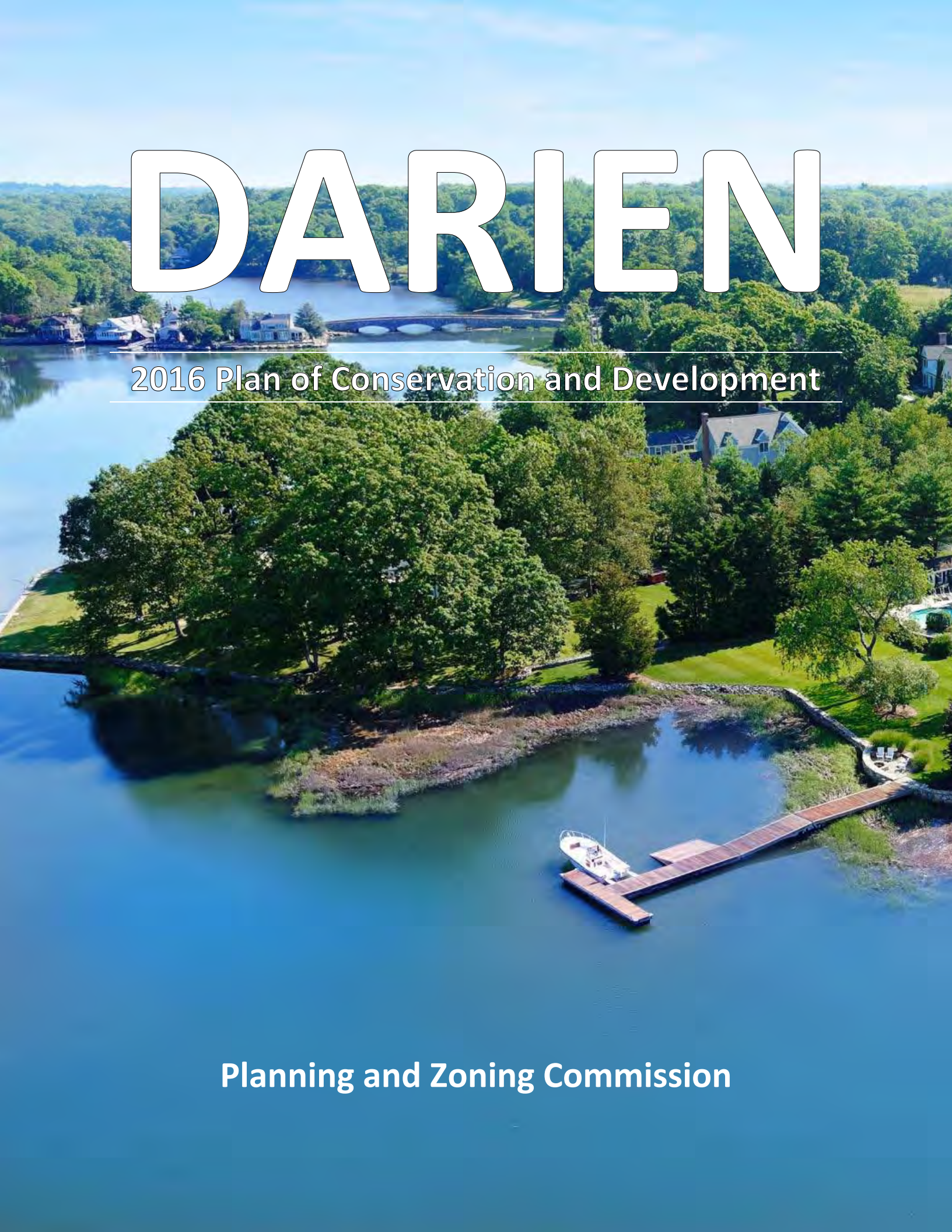
The stormwater monitoring results were compared the benchmarks established in the Industrial Stormwater General Permit, and the results indicate that no abnormal concentrations of constituents were detected.

7.5 Changes to Personnel Responsible for Plan Implementation

No changes to the personnel responsible for plan implementation occurred in 2016.

Tighe&Bond

APPENDIX A



DARIEN

2016 Plan of Conservation and Development

Planning and Zoning Commission

PROTECT NATURAL RESOURCES

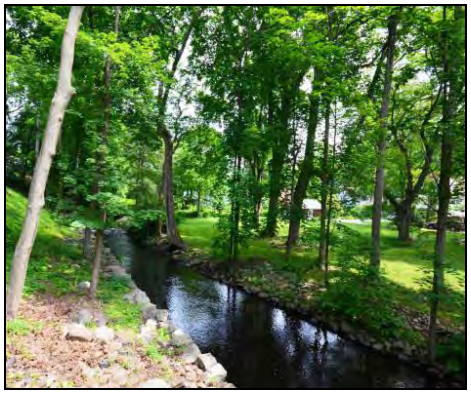
7

Overview

Conserving natural resources is important to Darien residents...

Conserving natural resource helps preserve environmental functions, enhance community character, and enhance the overall quality of life. Darien will continue efforts to protect natural resources

Watercourse



Wetland (Vernal Pool)

Water Quality

Flooding

Protect Water Quality

Protection of water *quality* is an important natural resource protection issue in Darien. In addition to residents who obtain drinking water from wells on their property, water quality is a key factor in overall environmental health.

The major threat to water quality is development activities and land uses– both in Darien and in upstream communities -- which introduce pollutants into the environment. This threat is exacerbated by:

- a drainage system where runoff is often untreated and discharged directly to watercourses, and
- lifestyle patterns where the impacts of daily activities on water quality (such as lawn fertilizer) are not always considered by residents.

As shown on the following map, water quality is good town-wide with some exceptions in and near the downtown Darien and the Noroton Heights business district and the main river estuaries.

Legend

Surface Water Quality Class

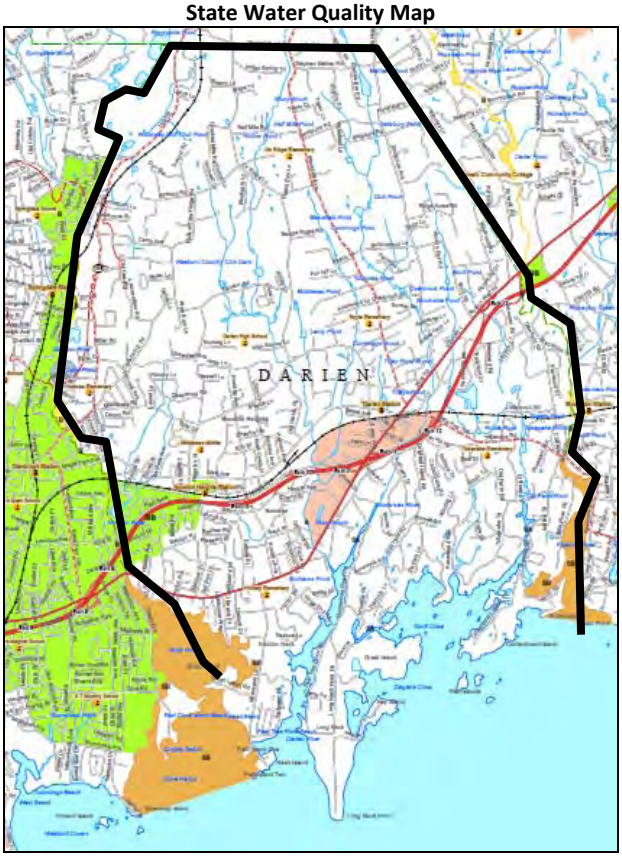
A	A
AA	AA
B, B*	B, B*
SA	SA
SB	SB

NOTES:
Surface Water Classifications beginning with S refer to Coastal and Marine Surface Water.
B* is a subset of Class B where no direct wastewater discharges are allowed other than those

Groundwater Quality Class

- GA (white background)
- GAA, GAAs
- GA, GAA may not meet current standards
- GB
- GC

State Water Quality Map



CT-DEEP

Protecting water *quality* can be furthered by the following types of strategies:

- managing land use activities to minimize pollutants,
- reducing the amount of effective impervious coverage (road widths, size of parking stalls, number of parking spaces, etc.) to reduce pollutants and allow for the use of some areas for implementing "low impact development" (LID) practices,
- implementing LID practices which use vegetation and infiltration to better manage stormwater quality,
- conserving or providing vegetated buffers (riparian buffers) along ponds, streams, and rivers,
- educating residents about threats to water quality (lawn fertilizer, herbicide, pesticide, pet waste, etc.), and
- ensuring appropriate erosion and sediment controls.

Darien has a State-defined "aquifer protection area" (the recharge area to a pumping public water supply well) along the Noroton River. Darien has adopted regulations to manage land use activities in this area and designated the Planning and Zoning Commission as the responsible agency.

Darien will continue to protect water quality in all areas of the community.

Protect Water Quality		
Policies	**Leader**	**Partners**
1. Continue to protect water quality.	HD	PZC *IWC* *CC*
2. Implement "low impact development" practices to help manage water quality and water quantity issues.	PZC	
Action Steps		
3. Educate design professionals and homeowners about LID tools and techniques.	*CC*	
4. Conduct public education about protecting water quality (including reducing fertilizer, herbicide and pesticide use).	HD	*CC*
5. Consider adopting a "septic management ordinance" which requires pumping of septic tanks and inspection of septic fields on a regular basis.	HD	BOS RTM *CC*
6. Develop and implement a systematic water quality testing protocol in local river systems and embayments to identify pollution sources and strategies to remediate issues.	HD	*CC*

Water Quality Protection

For many years, water quality protection focused on eliminating "point" sources of pollution (such as industrial discharges).

With the progress that has been made in reducing or eliminating pollution from these sources, attention has now turned to "non-point" sources. This includes storm drainage discharges, lawn fertilizer, septic systems, agricultural runoff, and similar sources.

Relevant Studies

Several studies have been completed which look at issues associated with water quality in Darien:

- Five Mile River Watershed Based Plan
- Holly Pond Sedimentation Study
- Watershed Analysis of Stony Brook

Additional analyses have been conducted for Goodwives River and Noroton River.

Drainage Manual

The Town of Darien has a comprehensive Drainage Manual (revised through 2009) which provides guidance on drainage analysis and approaches.

Public Versus Private Roads

About 27 percent of local roads in Darien are under private ownership and so the Town's ability to manage stormwater runoff from roadway surfaces may be limited in these areas. The map on page 121 identifies which roads in Darien are public and which are private.

However, about 73 percent of the roads are under public ownership and control and the Town can address stormwater runoff over this large area.

Address Water Quantity and Flooding

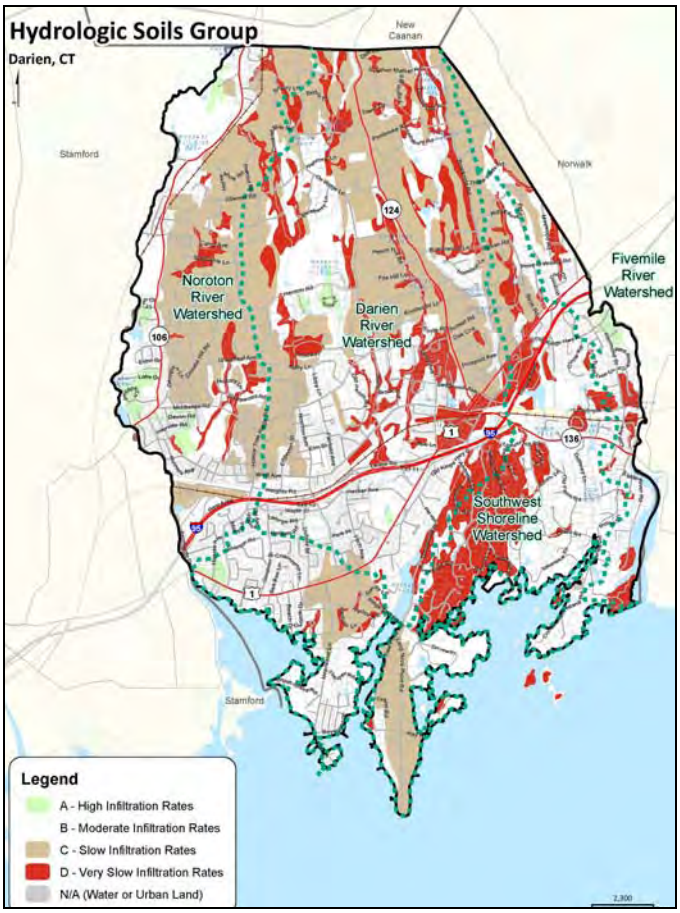
The management of water runoff *quantity* is also an important consideration for overall environmental health. Development can adversely affect water quantity since impervious surfaces:

- reduce groundwater infiltration and flow (reducing the water supply to wetlands and aquifers), and
- accelerate runoff (leading to channel scouring and siltation of water-courses and waterbodies).

Water quantity and flooding are significant issues in certain parts of Darien. There are two distinct reasons for this. First, over time, development has taken place adding impervious surfaces, causing more runoff, and resulting in drainage structures installed many years previously to become overwhelmed. Second, we are getting more intense storms. Storms which drop several inches of rain in a short period of time are becoming more frequent.

The adjacent map, which shows the "hydrologic soil group" classifications, shows that many areas of Darien are dominated by soils with slow and very slow infiltration rates. (tan and red colors).

Increased flooding can be expected in these areas (and areas downstream) due to the inability of the soil to infiltrate rainwater as fast as it falls.



Natural Resource Conservation Service

Generally, managing water quantity and reducing flooding can be furthered by the following types of strategies:

- reducing the amount of impervious coverage,
- increasing infiltration and detention,
- maintaining flow in watercourses (removing sedimentation), and/or
- replacing under-sized culverts.

Section 880 of the Zoning Regulations provides standards to address water quantity issues and applies whenever:

- 1,000 square feet or more of impervious coverage is added,
- an existing residential dwelling is demolished and reconstructed or replaced, or
- when any application is submitted to the Planning and Zoning Commission, the Zoning Board of Appeals, or the Environmental Protection Commission

The Town's Drainage Manual might benefit from some specific standards for infiltration, flow reduction, and water quality improvements. Some of the standards in the Connecticut Water Quality Manual might provide a starting point for further evaluation.

Overall, stronger implementation of "low impact development" (LID) approaches is recommended in order to be able to address the water resource issues of today and the future.

Dry Detention Basin

Water Quality Basin

No Curbing / Rain Garden

Water Quality Island At Darien Library

Importance of LID

Although most of the Town of Darien is fully developed, the potential exists for new development on undeveloped land throughout the Town and infill / redevelopment of currently developed areas.

If Darien continues to manage stormwater the way it has, drainage issues may get more urgent in the future because we are already at or near the margin of what can be accommodated.

New approaches, such as Low Impact Development (LID), are necessary to mitigate water quality and quantity impacts of future development and to protect high-quality water resources in Darien.

Opportunities exist for the implementation of LID for new development and redevelopment projects throughout the Town.

Freeboard

According to the Federal Emergency Management Agency website:

- "Freeboard" is a factor of safety expressed in feet above a flood level for purposes of floodplain management.
- "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.
- Freeboard is not required by National Flood Insurance Program standards, but communities are encouraged to adopt at least a one-foot freeboard to account for the one-foot rise built into the concept of designating a floodway and the encroachment requirements where floodways have not been designated.
- Freeboard results in significantly lower flood insurance rates due to lower flood risk.

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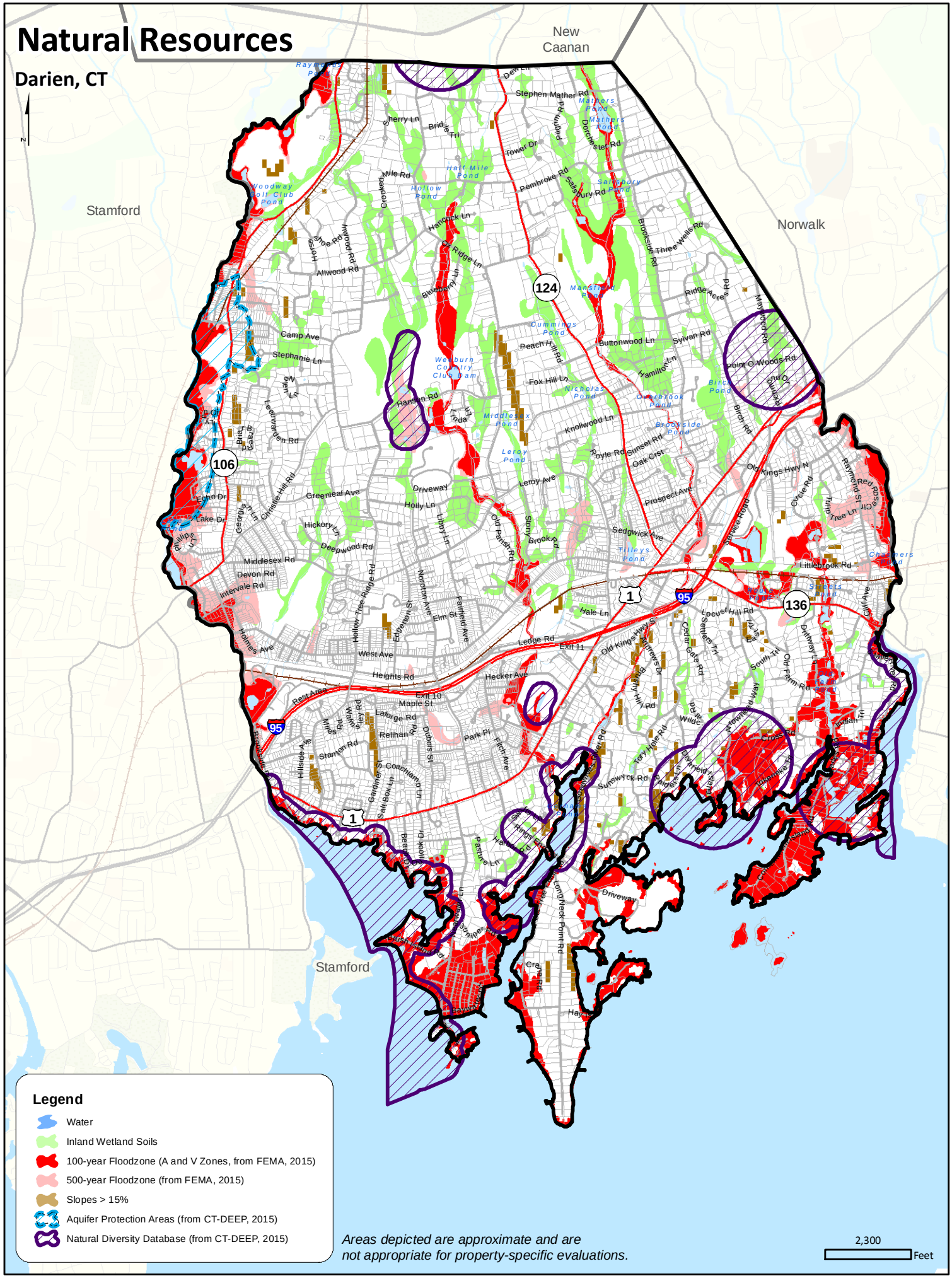
Address Water Quantity And Flooding		
Policies	**Leader**	**Partners**
1. Manage water quantity and runoff to maintain the water cycle and reduce the impacts of flooding.	PZC	*IWC* PW
2. Continue to protect floodplain areas.	FEB	PZC PW
3. Continue to participate in FEMA's National Flood Insurance Program.	Town	PZC ZBA
4. Continue to help property owners bring structures into compliance with FEMA standards.	Staff	
5. Support the purchase of properties within floodplain areas as open space, including using public-private partnerships, FEMA grants, and other approaches.	FEB	Town
6. Continue to implement "low impact development" (LID) practices to help manage water quantity issues.	PZC	
Action Steps		
7. Consider requiring additional "freeboard" (see sidebar) above minimum requirements when people rebuild in flood-prone areas.	PZC	
8. Adopt standards to regulate *impervious* coverage or effective impervious coverage (where tree cover and surface material are considered).	PZC	
9. Review the Drainage Manual for possible incorporation of LID stormwater management standards from the Connecticut Water Quality Manual or other sources.	PW	Town
10. Educate residents on the importance of flood control and proper watershed management.	FEB	*CC* Staff
11. Undertake projects, where appropriate and effective, to address flooding problems, including dredging of ponds if appropriate.	PW	FEB
12. Consider separating the Flood and Erosion Control Board from the Environmental Protection Commission so that they can focus on addressing drainage and flooding issues.	BOS	RTM
13. Continue to study and address flooding issues in Darien with assistance of the CT-DEEP, CT-DOT, and affected property owners.	PW	BOS RTM

Natural Resources

Darien, CT



Natural Diversity Database

The Connecticut Department of Energy and Environmental Protection (CT-DEEP) maintains a Natural Diversity Database (NDDB) in order to help public agencies protect important resources. NDDB areas represent known locations of:

- endangered species,
- threatened species,
- species of special concern, or
- significant natural communities.

It may also identify scenic areas and unique natural assets (waterfalls, caves, etc.).

The NDDB map is updated regularly and sent to the Town as well as being posted on the DEEP website.

The exact locations and species names are masked to protect sensitive species from collection and disturbance. People proposing activities within designated NDDB areas should contact CT-DEEP so that planned activities can occur while the resource itself is protected.

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Protect Other Important Natural Resources

Watercourses, waterbodies and wetlands are key natural resources and play important roles in the water cycle and overall environmental health.

In addition to protecting these natural resources, Darien may also undertake other efforts to protect other important natural resources.

Protect Other Important Natural Resources		
Policies	**Leader**	**Partners**
1. Continue to protect and enhance wetlands and watercourses.	*IWC*	PZC
2. Establish and maintain vegetated buffers adjacent to wetlands and watercourses.	*IWC*	PZC
3. Continue to protect other important natural resources such as steep slopes, sensitive habitats and other natural diversity areas.	*IWC*	PZC
4. Discourage the introduction of invasive species and seek to remove invasive species.	*CC*	PZC
5. Improve local air quality when possible and practical.	Town	
6. Seek to coordinate resource protection activities with interest groups, adjacent communities, and regional organizations.	*CC*	PZC
Action Steps		
7. Consider separating the Environmental Protection Commission into a regulatory agency (an Inland Wetlands Commission) and a strategic organization (a Conservation Commission).	BOS	RTM
8. Continue to post GIS information and maps on the Town's website so that people can become more aware of the natural resources in Darien.	Staff	
9. Ensure that local application procedures require investigation of Natural Diversity Database (NDDB) sites (see sidebar).	PZC	*IWC*

MANAGE UTILITY INFRASTRUCTURE

14

Overview

Utility infrastructure has a significant influence on overall public health, safety, welfare, and quality of life …

The availability of utility infrastructure – water, sewer, electricity, and communications, for example – has a significant influence on overall public health, safety, welfare, and quality of life. Even though some of these utilities may be provided by private companies, their availability is important for residents, businesses, and visitors to Darien.

The POCD looks at the availability of these utilities (both capacity and location) to ensure they are adequate for community needs.

Water Service

Sewage Service

Storm Drainage

Wired Utilities

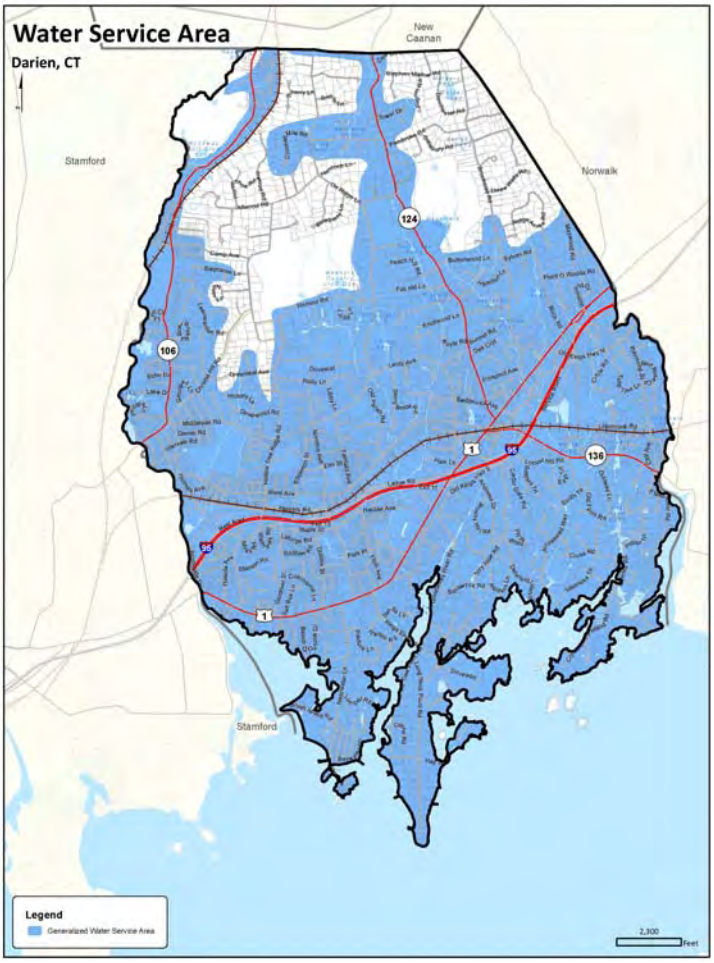
Maintain and Enhance Piped Utilities

Maintain and Enhance Water Service

Water service in Darien is provided by the Aquarion Company as part of their water system in southwest Connecticut. Aquarion reports that it has over 6,600 connections in Darien and thus serves about 19,900 residents.

Aquarion reports they have ample supply capacity to meet local needs and continue to make improvements to improve capacity and pressure. Water quality is in accordance with State and Federal requirements. Water pressure can be an issue in some areas and the Town will continue to press Aquarion to address these situations. The Town will also advocate for "color-coded" hydrant tops that clearly indicate the available pressure in different locations.

Overall, the water system is expected to be adequate for community needs during the planning period (2016-2026).



Maintain and Enhance Sewer Service

Over 70% of the Town of Darien is served by a sanitary sewer system. The system collects sewage discharges from local properties and conveys them to the water pollution control facility in Stamford. Darien has an inter-municipal agreement with Stamford for the treatment of sewage waste. Operation of the sewer facilities in Darien is overseen by the Sewer Commission.

According to the Public Works staff and the Health Department, no area of Darien is considered a "sewer avoidance area" at this time. In other words, all areas of Darien may be eligible for public sewer service at some time in the future.

Other issues to address in the future to make efficient use of available sewage treatment capacity include:

- inflow (discharge of non-sewer water from basement sump pumps, roof leaders, and other sources) and
- infiltration (seepage of groundwater into sewer pipes).

Sea Level Rise

While there are not expected to be any major issues in Darien related to sewage capacity, one of the issues for the community to address in the future is related to possible future climate change and sea level rise.

Sewers tend to be located in low lying areas (in order to collect sewage from nearby properties) and these areas are vulnerable to flooding.

In the future, Darien will need to develop strategies to floodproof or protect sewage infrastructure (such as pump stations and manholes) from flood damage or sea level rise.

Encourage Expansion Of Natural Gas Service

While natural gas service is not widely available in Darien at the present time, natural gas service is being considered for some of the major developments being proposed in downtown Darien and the Noroton Heights business district. Gas service should also be extended to major municipal facilities, if possible (especially since some of these serve as emergency shelters). The introduction and expansion of natural gas service is encouraged since it can provide an alternative source of fuel to local residents and businesses.

Address Storm Drainage Issues

Storm drainage in Darien is addressed by a combination of structural systems (such as catch basins and underground pipes) in areas of newer development and by more natural approaches (ditches and swales) in other areas. Drainage and flooding issues can occur along a number of watercourses in the community since culverts and drainage facilities did not anticipate the level of development prevalent today.

While the Town has attempted to address some of the more difficult drainage situations, these proposals have sometimes been opposed by the abutting property owners. As a result, some of the problems have persisted for a long time and will likely persist into the future until some consensus or direction emerges among the affected property owners.

In the meantime, the Town is utilizing a drainage policy which encourages or requires detention on individual sites. This policy (called "fresh meadow") means that any new development is evaluated on the total drainage impact as if the site was an undeveloped meadow rather than an already developed site. In the future, it is anticipated that Darien will do more to implement "low impact development" strategies where attention is paid to treating runoff to remove pollutants and infiltrating it into the ground as soon as possible.

While this approach will certainly yield benefits over the long term, there are some serious drainage issues at the present time that will persist unless something is done.

Darien Flooding

Darien Flooding

Maintain And Enhance Piped Utilities		
Policies	**Leader**	**Partners**
1. Continue to work with utility companies to improve utility service and response.	Town	
2. Encourage improvement of water service.	Town	
3. Advocate for color coded hydrants (shows water flow/pressure).	VFD	
4. Maintain and enhance sewer service.	SC	PW HD
5. Develop strategies to floodproof or protect sewage infra-structure (such as pump stations and manholes) from flood damage or water level rise.	SC	PW
6. Continue to investigate and address inflow and infiltration of non-sewer water.	SC	PW
7. Encourage expansion of natural gas service.	Town	
8. Continue to investigate and address drainage and flooding issues (such as undersized culverts).	PW	
9. Continue to address storm drainage issues (such as requiring new development to conform to the Town's "fresh mead-ow" drainage policy).	PW	PZC
10. Continue comprehensive master drainage planning.	PW	
11. Implement "low impact development" strategies where attention is paid to treating runoff to remove pollutants and infiltrating it into the ground as soon as possible.	PW	PZC *IWC* HD

Rain Garden

Pervious Pavement

Streetlights

Some communities are purchasing and then managing and maintaining local streetlights.

Darien should consider this approach in order to maintain the street-lighting system as cost-effectively as possible.

This should also include a conversion of streetlights to LED technology.

Maintain and Enhance Other Utilities

Wired utilities include electrical service, wired telephones, and also cable television / internet. The reliability of these systems is an important consideration since they can be vulnerable to service interruptions from storm events and other disruptions where the wires are exposed. In areas such as downtown Darien and the Noroton Heights business district, it is the Town's desire that wired utilities be placed underground. In other areas of Darien, the Town will continue to seek an appropriate balance between electrical reliability and the impacts on community character / environmental health from trimming of tree branches.

The Town will encourage expansion of internet capacity for residents and businesses.

People are increasingly relying on wireless services for voice and data. Wireless services enhance public safety since people can call for assistance from anywhere service is available. People are often concerned about wireless services because of the visual impact of new towers.

Darien will seek to balance the demand for wireless services and the public safety benefits with the visual and other impacts of new tower installations.

Maintain and Enhance Other Utilities		
Policies	**Leader**	**Partners**
1. Continue to work with utility companies to improve utility service and response.	Town	
2. Continue to seek an appropriate balance between reliability of wired utilities and community character / environmental health.	Town	PW TW
3. Consider acquiring the street-lighting system and operating it as cost-effectively as possible.	Town	PW
4. Seek to balance the demand for wireless services and the public safety benefits with the visual and other impacts of new tower installations.	Town	
5. Work with property owners and utility companies to bury utility wires, especially in downtown Darien and the Noroton Heights business district.	Town	PW
6. Encourage the expansion of internet capacity and wireless coverage while maintaining community character.	Town	

Tighe&Bond

APPENDIX B

Five Mile River Watershed Based Plan

Submitted by:
AKRF, Inc.
307 Fellowship Road, Suite 214
Mt. Laurel, NJ 08054
Project 71120.4004 NJ12166

On behalf of:
The South Western Regional Planning Agency
888 Washington Boulevard, 3rd Floor
Stamford, CT 06901

May 21, 2012

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Yari Bletsas, City of Norwalk

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Kathleen Holland, Town of New Canaan

Matt Marion, Five Mile River Commission

Christopher Malik, Connecticut Department of Energy and Environmental Protection

Robert Wagman, West Norwalk Association

COMMONLY USED ACRONYMS

BMP	Best Management Practice
CFU	Colony-Forming Units
CLEAR	University of Connecticut Center for Land Use Education & Research
CTDEEP	CT Department of Energy and Environmental Protection
CWP	Center for Watershed Protection
E. coli	*Escherichia coli*
EPA	U.S. Environmental Protection Agency
HSG	Hydrologic Soil Group
ICM	Impervious Cover Model
IDDE	Illicit Discharge Detection and Elimination
LID	Low Impact Development
LIS	Long Island Sound
N	Nitrogen
NEMO	Nonpoint Source Education for Municipal Officials
NO_3	Nitrate
NOAA	National Oceanic and Atmospheric Administration
NPS	Nonpoint Source
NRCS	Natural Resources Conservation Service
NURP	National Urban Runoff Program
O&M	Operations and Maintenance
P	Phosphorous
POTW	Publicly Owned Treatment Works
SNEW	South Norwalk Electric and Water
SSURGO	Soil Survey Geographic
SVA	Stream Visual Assessment
SWRPA	South Western Regional Planning Agency
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
UConn	University of Connecticut

Chapter 5 MANAGEMENT GOALS & STRATEGIES

As discussed in earlier chapters, the Five Mile River Watershed has been stressed and degraded by multiple factors relating to urban development and human use. Significant improvements in water and habitat quality, and biological community health are required to fully realize the great potential of the Five Mile River as a positive community resource.

Management goals move past the notion that the Five Mile River needs to be improved to define the specific long-term outcomes that will lead to a healthy, high-quality river system that meets the needs of its diverse stakeholders. Goals were developed by the project steering committee, taking into consideration the existing conditions analysis presented in Chapter 3 and the uses and values defined in Chapter 4.

The management goals defined for the Plan are as follows:

- Enhance stormwater management;
- Improve water quality;
- Protect and enhance wildlife habitat; and
- Increase awareness and stewardship.

Management strategies outline sets of activities that, when implemented, will result in the outcomes defined by the goals. As with goals, the strategies were developed with important input from the project steering committee through a series of public workshops. Each goal and strategy is discussed in detail in the sections below.

The following management strategies were identified:

- Avoid future increases in stormwater related impacts through adoption of LID policies;
- Reduce NPS pollution, peak flow rates, channel erosion, and flow stress through implementation of structural BMPs in developed areas;
- Limit nutrient and bacteria sources from large properties;
- Improve riparian habitats and protect undeveloped areas within the watershed;
- Identify and eliminate illicit discharges and improve solid and liquid waste management
- Reduce the frequency and severity of flooding;
- Encourage better stewardship of public and private lands by implementing education and outreach programs for homeowners and municipal officials; and
- Implement a water quality monitoring program.

MANAGEMENT GOALS

Building on the uses and values defined in Chapter 3, the Plan establishes primary management goals focused on enhancing stormwater management, protecting and improving water quality, preserving wildlife habitat, and engaging community members in the management of the watershed. Goals were established by watershed stakeholders through a public meeting format following identification of watershed uses and values. While there are other goals that could be developed, it is important to focus management efforts primarily on these high-priority goals.

Enhance stormwater management

Biological, aesthetic, and recreational value are all collectively undermined by the impacts of unmanaged stormwater. Review of existing data and field assessment suggests that stormwater-related impacts have significantly impaired many areas of the Five Mile River and its tributaries. Unmanaged stormwater disrupts local habitats, creates high-flow conditions that stress aquatic organisms, convey pollutants that negatively affect aquatic life, and increase bank erosion rates. This in turn leads to higher nutrient loading, algae blooms, and sedimentation. Unmanaged stormwater also undermines recreational and aesthetic value by creating unsightly conditions (e.g., trash, eroding banks, gully-like channels, etc.) and carrying bacteria, which impairs safe contact activities such as swimming and fishing. A coordinated effort to better manage stormwater will result in improvements to biological conditions as well as a more beautiful river with enhanced recreational opportunities.

Improve water quality

Protecting water quality through watershed based planning is a primary goal. Good water quality is important for drinking water supply, recreation, aesthetics, property value, and diverse, healthy biological communities. Water quality is affected by a variety of factors, including adjacent and regional development patterns. Of particular importance in lower-density residential neighborhoods is the protection of roadside wetlands that may receive and manage road runoff. While many of these wetlands were observed to be in fair condition during field assessments, many more appear to have been overwhelmed by the quantity of stormwater piped in during storm events.

Protect and enhance wildlife habitat

Because so much of the Five Mile River Watershed is developed, the remaining natural areas provide critical habitat for songbirds, amphibians, and small mammals. Roadside wetlands, meadows, and even some residential properties offer refuge for species displaced by development. Yet storm flows are damaging riparian and wetland areas, and widespread development is driving some species such as deer and raccoons into uncomfortably close quarters with people. It is therefore critical that the remaining high-quality habitats be set aside before they are disturbed. Where disturbance has already occurred, natural habitats can be re-created through meadow creation in open areas, creation of floodplain wetlands and vegetated stormwater practices, and the restoration of sediment-laden roadside wetlands and riparian areas.

Increase awareness and stewardship

Given the importance of the Five Mile River Watershed to its community, the watershed could benefit from an established partnership or other civic organization to advocate for better management. When public officials, residents, and other watershed stakeholders are aware of and educated about the issues facing the watershed, they are more likely to take positive actions that

benefit the river. In particular, given the large portion of the Five Mile River Watershed that is in private landownership, engaging residents and business owners in implementing watershed-friendly practices on their properties will be a central component of implementing the Plan. Education programs give residents easy to implement activities that also benefit their lives in other ways (e.g., rain gardens that could help to reduce local property issues or beautify a neglected planting bed) Incentive programs, technical assistance, recognition, and cost-sharing programs can also help put awareness into action.

MANAGEMENT STRATEGIES

Management strategies define specific sets of management actions required to achieve the broad outcomes outlined in the preceding goals section. Strategies were developed considering known constraints and assets in the watershed, including the availability of open space for restoration and protection, potential for partnership among stakeholders, availability of existing data, and community priorities within the watershed. Strategies are integrative by design; that is, they often address multiple goals simultaneously. The following section discusses each of eight management strategies that form the basis for Plan implementation, and later in this chapter is a list of management actions that support each of the strategies presented below.

1. Avoid future increases in stormwater-related impacts through adoption of low impact development policies

Low impact development (LID) policies decrease the impacts of development on natural systems by requiring or incentivizing the use of an LID design approach for new and redevelopment projects. Adopting LID policies most often involves strengthening municipalities' existing stormwater, subdivision, and zoning and land development ordinances which require more stringent controls in highly sensitive areas. These policies help ensure that new and redevelopment projects in the watershed are constructed in ways that minimize impacts to local waterways. LID techniques include reducing impervious surfaces associated with new development or redevelopment by the use of narrower roads or elimination of cul-du-sacs, which avoid soil compaction and mass regrading of development sites. An LID approach would require developers to locate buildings, roadways, and parking lots away from streams, wetlands, floodplains, high-quality forests, and other sensitive natural resources, and involve the use of small-scale stormwater treatment practices such as rain gardens to soak stormwater into the ground at its source. These techniques mimic the way stormwater flows through undeveloped lands such as forests.

Although LID approaches are important throughout the watershed, the strongest development controls are meant to be implemented in headwater watersheds, where streams are in relatively good condition and where new sources of unmanaged stormwater could quickly lead to increased rates of stream channel and bank erosion, and upstream of New Canaan Reservoir, where water quality requirements are the more stringent. In particular, the upper Five Mile River Watershed in the town of New Canaan has seen a recent increase in residential development of very large single-family residences that lack stormwater controls. Requiring an LID approach to this type of development will ensure that future development does not result in an increase in stormwater runoff and NPS pollution.

LID policies involve a number of specific requirements that encourage a more watershed-friendly approach to development:

- Municipal stormwater requirements that require volume-based management of smaller storms for water quality protection (typical requirements include the infiltration of at least the first inch of runoff from impervious surfaces); peak-rate control for moderate storms to protect channels from eroding (moderate-sized storms tend to inflict the most stream erosion over time); and management of larger storms for flood control are all useful to reduce impacts associated with development.

- Progressive zoning provisions, such as cluster development and transit-oriented development, can limit sprawl. These approaches cluster development in a smaller area, leaving more open space, or locate development close to existing transportation and transit resources to limit the need for additional transportation infrastructure.

- Development ordinances may choose to include mandatory tree mitigation requirements (i.e., programs that require trees to be replaced if they are removed); limit road widths and parking space sizes; allow flexibility in setback requirements (requirements for building setbacks from roadways or property boundaries sometimes limit the ability to cluster housing to protect open space and increase minimum lot sizes); strongly limit development on steep slopes; and require a conservation oriented design approach that seeks to minimize mass grading, engineered fills, whole-scale vegetation removal, and soil compaction (these practices are commonly associated with large-scale commercial developments). Incentives for practices that allow for infiltration into the ground, such as use of pervious pavements, depressed islands, and vegetated swales along roadways and parking lots should also be encouraged.

To set an example for the development community, LID practices may also be used in new municipal construction and long-term planning. For example, LID practices such as bioretention systems and rain gardens can be incorporated into streetscaping or repaving projects to create “green streets” that add visual interest to street corridors. Similarly, new municipal facilities can incorporate LID practice such as rain gardens instead of traditional landscaping.

In some instances, municipal code may actually discourage LID (i.e., by requiring large minimum lots sizes or significant setbacks). A full review of existing land use regulations is recommended to identify barriers to LID implementation and to identify opportunities for incorporating LID into existing municipal regulations. Additionally, retraining and education programs for municipal officials and staff, construction inspectors, consulting engineers, contractors, and developers will help to ensure that LID regulations are properly implemented.

***Synergy*:** The watershed based approach provides a great opportunity to engage in multi-municipal planning so that development requirements are consistent throughout the watershed.

***Existing resources*:** Many existing resources are available that provide model stormwater management resources including the CTDEEP’s website http://www.ct.gov/dep/cwp, the CWP’s web site (cwp.org) and the Low Impact Development Center (lowimpactdevelopment.org)

***Approach*:**

- Key aspects of an effective and far reaching stormwater ordinance include providing standards for water quality protection (typically managing the first inch of runoff through infiltration), channel protection (typically managing 1–2 year storms), and flood control (peak rate control for larger storms, such as the 25-, 50-, and 100-year storms) for all new development and major redevelopment.

- A model LID ordinance may be useful to establish minimum stormwater criteria and promote LID approaches watershed wide.
- Municipal improvement projects may choose to utilize LID techniques wherever possible, in order to present an example for business and residential communities. Demonstration sites in particular may be useful for promoting LID practices while providing water quality benefit.

Next steps:

- Form a multi-municipal planning group to review existing ordinances and begin the process of multi-municipal planning.

2. Reduce nonpoint source pollution, peak flow rates, channel erosion, and flow stress through implementation of structural BMPs in developed areas

As discussed in previous chapters, unmanaged stormwater runoff degrades waterways in numerous ways. Stormwater runoff carries NPS pollutants into local waterways, increases flooding, causes stream channels to more quickly erode, and physically stresses aquatic life. While LID policies will help reduce these impacts for new or redevelopment sites, the areas of the watershed that are already developed will require the construction of new stormwater management practices or structural BMPs to remove pollutants and reduce the volume of stormwater entering local streams. Structural BMPs consist of many of the same techniques called for in LID designs but are installed to manage runoff in already developed areas.

Synergy**:** Structural BMPs offer many benefits for improving the health of local streams and for enhancing neighborhoods, private properties, and commercial districts. For example, incorporating rain gardens within a public park adds visual interest to the park landscape and reduces maintenance costs associated with turf management. Similarly, installing rain gardens or wetlands on a school campus provides opportunities for teachers to involve students in learning about watersheds and stormwater. Finding opportunities to pool funding resources among park departments, school districts, and private donors and "piggy back" structural BMP projects onto other capital improvement projects can help to significantly reduce costs.

Warning**:** While structural BMPs are effective at managing stormwater from small storms, they are often not large enough to reduce flooding associated with very large storms. Therefore, while structural BMPs can help to reduce flooding, larger flood control facilities will be required to control the large floods that are most often responsible for property damage.

Study needs**:** A comprehensive study is needed to determine the impact of various levels of both traditional infrastructure and BMP-type treatment (i.e., "green" infrastructure) on flood elevations within flood prone areas. This study will help to understand the degree to which structural BMPs can help to resolve the most significant flooding problems in the watershed.

Approach**:**

- The Five Mile River Watershed provides a range of structural BMP opportunities that vary significantly in terms of implementation cost and benefit. Generally the "low-hanging fruit" (i.e., low-cost/high-benefit management actions) involve the following types of opportunities:
  - Opportunities to treat runoff from large developed areas within existing open space or parkland (e.g., schools and parks where street runoff can be diverted and managed in unused open spaces, etc.);

- Retrofits of existing stormwater basins, such as the large commercial basins/swales found along Route 1, to provide water quality benefits (existing stormwater basins were often designed primarily for flood control and do little to remove pollutants from the small storms that deliver most of the NPS pollution to streams); and
- Small-scale structural BMPs within institutional and commercial properties that have large unused open spaces (e.g., schools, universities, corporate campuses). These projects often provide the opportunities to accrue other benefits (e.g., educational or beautification benefit) and can be located within existing turf areas that are not actively used.

- Concentrating projects within specific areas of the watershed (as opposed to a scatter-shot approach involving implementation throughout the entire watershed) can help to create more momentum and demonstrate results in a shorter time.
- Efforts should be focused on portions of the watershed that drain to stream segments listed as impaired by the CTDEEP 303(d) list of impaired waters.

3. Limit nutrient and bacteria sources from large properties

Bacteria have been identified as a source of recreational impairment in the watershed. Dense algal growth has been observed on the Main Stem, indicating that nutrient levels may also be elevated. While observed impairments are concentrated on the Central and Lower Main Stem, it is generally thought that nutrient and bacteria problems are widespread throughout the watershed.

Nutrients and bacteria are carried to streams via stormwater runoff. Structural BMPs can help remove these pollutants from stormwater runoff prior to entering streams. However, structural BMPs can be expensive, ownership and space constraints can limit the number of viable project sites, and structural BMPs typically only remove a percentage of the pollution they receive.

A complementary strategy to structural BMPs complimentary approach involves managing developed areas in ways that limit the amount of pollution that is exposed to stormwater runoff. This action focuses on working with large landowners, including municipal facilities, golf course owners, hobby farm owners, and pond owners, to reduce the amount of NPS pollution they generate. Additional approaches for reducing NPS pollution for residential homeowners are discussed in strategy 7.

***Synergy*:** Because structural BMPs typically only remove a percentage of the pollution delivered, limiting pollution sources can further reduce pollutant loading.

***Warning*:** Because pollution from residential properties is so diffuse, it may be difficult to create meaningful incentive for homeowners to change their actions (see strategy 7).

Approach: During the existing conditions assessment (Chapter 2), several land use conditions were identified that likely play a role in generating nutrient and bacteria pollution in the watershed. These areas included golf courses, where large turf areas are heavily fertilized; unbuffered ponds and small impoundments, where geese colonize and non-native aquatic vegetation may be prevalent; and small hobby farms where livestock have unlimited access to streams.

Activities to address reduction of NPS pollution in these areas include the following:

- **Developing nutrient management plans for municipal facilities and golf courses.** Working with municipal facilities and golf courses to develop nutrient management plans helps managers target fertilizers where they are needed most, avoid over-fertilizing areas

that have adequate soil nutrients, time fertilizer treatments when they are less likely to runoff into streams, and select fertilizers that are less prone to washing off into streams. The practices can also result in cost savings for the course operators. Nutrient management planning also looks at opportunities to add shoreline and riparian vegetation to filter runoff from play areas that may contribute NPS pollution.

- **Developing nutrient management plans for hobby farms.** Owners of hobby farms may be eager to learn about alternative methods of waste management to reduce inputs to the stream. Simply limiting livestock access to streams is an excellent way to reduce erosion and limit direct inputs of nutrients and bacteria. Other source controls can include manure storage facilities and reducing fertilizer use.
- **Improve small pond management by adding buffers**. Flocks of geese around small ponds can be locally significant often sources of nutrients and bacteria. Working with property owners to plant buffers along their ponds can deter geese while filtering polluted runoff.

4. Improve riparian habitats and protect undeveloped areas within the watershed

Riparian buffers, areas of natural vegetation immediately around a stream or waterbody, provide multiple benefits for streams including reducing stream temperatures, providing food inputs for aquatic organisms, and filtering pollutants. Planting riparian buffers along unbuffered areas can help to significantly reduce NPS pollution, particularly along stretches of stream adjacent to land uses that typically generate high pollutant loads, such as golf courses and farms. Multiple locations have been identified for potential riparian buffers (Appendix A).

While planting riparian buffers along unbuffered streams can reduce pollutant loads, protecting existing riparian buffers and other undeveloped lands is also critical for limiting the amount of new developed in the watershed, limiting the potential for further increases in NPS pollution and flooding, protecting critical habitats, and maintaining the scenic and recreational benefits of open space. Many of the remaining open space areas in the Five Mile River Watershed are unmanaged private properties that are at risk of development. Permanent conservation of these lands will be important to maintaining habitat values and may help to prevent further increases in flooding downstream. Once parcels are protected, management of invasive species and restoration of destabilized banks can improve habitat within the stream and the riparian forest.

There may also be some opportunities for increasing flood storage within parklands, utility rights-of-way, or otherwise undeveloped areas. Enhancing flood storage in these areas can be coupled with restoring riparian vegetation communities for maximum in-stream benefit. Where floodplain restoration work is not feasible, simple riparian buffers and planting may be a desirable alternative.

***Synergy*:** Acquiring undeveloped lands adjacent to the river can also provide the beginnings of a connected greenway that will provide enhanced recreational opportunities and enhanced riparian habitats within the watershed.

Warning: Constructed wetlands and otherwise modified riparian areas may be controversial and require varying degrees of public outreach. Perspectives on this complex issue should be openly discussed with a goal of achieving a consensus policy among the community.

Approach: A number of specific riparian buffer projects have been proposed and are presented in Appendix A. Riparian buffer projects can also be incorporated into source control projects suggested in strategy 4 and homeowner outreach efforts outlined in strategy 7.

A feasibility analysis will assist in understanding the potential scope of specific floodplain restoration projects as a means to reduce flooding. Initial site walks conducted during this study suggest that opportunities for increasing flood storage along the Five Mile River will be limited, given the level of existing development and general lack of public properties.

Likewise, opportunities for conservation acquisition may be somewhat limited given the relative scarcity of undeveloped land. However, acquiring and protecting undeveloped tracts of forested lands in the upper reaches of the watershed should be a conservation priority. These lands provide the greatest concentration of high-quality upland and aquatic habitats and are critical for ensuring the health of sensitive headwater areas and drinking water supplies.

5. Identify and eliminate illicit discharges and improve solid and liquid waste management

Illicit discharges are unpermitted piped pollution sources typically associated with commercial and industrial facilities and leaking septic systems. Car washes, laundry or industrial facilities, and leaking septic systems are common culprits, but almost any residence or business could potentially be a source. Illicit Discharge Detection and Elimination (IDDE) programs (i.e., track-down programs) that combine water quality monitoring, outreach, and municipal enforcement have been effective methods to remediate potential impairments.

***Synergy*:** Septic system surveys and educational materials can be effectively combined with other homeowner outreach activities outlined in strategy 7.

***Warning*:** Because impairments are not well documented, it may be useful to establish baseline bacteria and nutrient conditions within the watershed before launching a full-scale IDDE program.

Approach: IDDE programs are typically implemented by municipalities. The process typically first involves conducting stream assessment to identify and document suspected illicit discharges and subsequently working with individual property owners to either eliminate the discharge or bringing the discharge into compliance with applicable regulations. Databases are useful for keeping track of suspected and confirmed illicit discharges and any activities that have been undertaken to eliminate or otherwise resolve the discharge. Many municipalities and state agencies have well developed IDDE programs and detailed guidance for developing IDDE programs is widely available on the internet.

Identifying and fixing leaking or otherwise malfunctioning septic system can be a challenge. Typically, the process involves first conducting a desktop inventory using existing data would help identify target areas in each municipality where poorly-functioning septic systems are likely to be a problem. Following this assessment, track-down water quality monitoring may be conducted to detect plumes and concentrated bacterial or nutrient impairments. Surveys can also be used to identify potentially malfunctioning systems. Educational and outreach programs can help homeowners take preventative steps and routine maintenance to prevent malfunction, recognize the signs of a malfunction, and understand the appropriate steps required to repair or replace faulty systems.

6. Reduce the frequency and severity of flooding

Intense stream-side development and high levels of urban development have led to recurring incidences of flooding in the mid- and lower watershed. These problems have been well documented. Stormwater management and LID practices identified in the Plan may be helpful to reduce flooding, although their effectiveness may be limited in reducing the intensity of large floods.

In addition, culvert and bridge modifications have been recommended to reduce surface elevations in identified flood-prone neighborhoods (Milone & MacBroom 2010). Additional flood mitigation initiatives may include flood proofing, voluntary buy-outs of properties with repeated flood insurance claims, structural measures such as levees and berms, and creating additional flood storage within open spaces located in floodplain areas.

Synergy: Some reduction in flooding frequency will occur as an ancillary benefit of implementing many of the multiple NPS management actions proposed in the Plan. These include riparian restoration, structural BMPs that emphasize storage and infiltration, and LID planning.

Warning: Structural BMPs designed for channel protection and improved water quality may require additional space and different design elements provide a flood control function.

Approach: It is important to emphasize that this Plan is not intended to offer a comprehensive flood mitigation strategy for the Five Mile River. However, strategically located structural BMPs implemented to reduce pollutant loading may also be useful to improve flooding conditions. Specifically, a detailed assessment is recommended for potential restoration work in the Mill Pond area, possibly coupled with widespread implementation of structural BMPs and LID policies in downtown New Canaan. Extensive modeling has already been conducted in this area (Milone & MacBroom 2010), so modeling for proposed management actions may be relatively straightforward.

7. Encourage better stewardship of public and private lands by implementing education and outreach programs for homeowners and municipal officials

Promoting healthy attitudes toward stewardship and general property management is a critical step toward improving overall watershed health. Educational materials can focus on helping both private citizens and public officials become more aware of the connections between NPS pollution and local-scale actions such as lawn care practices and pet waste management and can provide practical, easy-to-implement actions for reducing NPS pollution. Educational initiatives can make use of the full range of media outlets and presentation mediums. The following methods may be useful for engaging and educating community members to take more active roles in management of their watershed:

- Workshops geared toward homeowners, developers, engineers, land use attorneys, and golf course managers, presented by municipal conservation boards or local naturalists (topics may include lawn maintenance and landscaping; stormwater management; management of small ponds and impoundments; and proper septic care);
- Targeted e-mail and social media campaigns to direct community members to a website/online resource center with downloadable information, interactive maps, blog, and RSS feeds to news outlets for watershed professionals (state and local news sites, stakeholder pages, etc.);
- Courses and outreach for municipal officials (particularly Public Works, Parks, and Education Departments) geared toward LID practices, MS4 compliance and good housekeeping, and case studies of gray-to-green initiatives across the country;
- Courses for municipal officials geared toward open space protection and policy options for encouraging LID;
- Streamwalks, cleanups, enhanced river access points, and volunteer monitoring events geared toward developing active volunteer task forces and getting people out into the river; and

- Public service announcements for local radio and television stations.

Synergy**:** A "neighborhood-by-neighborhood" approach to stewardship may be helpful both to create localized improvement and to spur a sense of participation and civic engagement. Education and outreach programs can be combined with nearby demonstration projects involving, for instance, the installation of structural BMPs at community centers, schools, and churches.

Challenge**:** Some watershed residents and officials are likely to be highly educated and motivated to implement watershed-friendly practices. Although general awareness of watershed issues has increased in recent years, for the majority of residents and municipal officials, watershed issues still lag behind other "quality of life" issues including education, crime, and health care. Linking watershed issues with quality of life issues like drinking water can help to get these issues "on the radar screen."

Approach**:** A detailed plan for incorporating education and outreach activities into Plan implementation is provided in Chapter 7. This Plan emphasizes proven approaches such as targeting early adopters who can set a positive example for others to follow, combining education and outreach events with existing events (e.g., community fairs) to maximize participation, and emphasizing simple messages that stress changing one or two behaviors. The education and outreach plan also stresses the use of multiple media forms to multiple audiences and creating a brand image using logos and consistent graphic styles.

8. Implement a water quality monitoring program

The Plan outlines specific steps that, based on prior experience and best science, are likely to result in significant stream and watershed improvements. As stakeholders work to implement the Plan, feedback on whether the Plan is working is critical. Using a process termed "adaptive management," water quality monitoring provides critical information concerning what management actions are working, and allows for adjustments to the Plan in ways that improve outcomes. Monitoring data can also be effectively used as an outreach tool for attracting additional funding.

Synergy: Visual assessments and water quality sample collection are excellent opportunities to involve volunteers and streamside residents. As volunteers take an active role in stewardship, their awareness of related watershed issues will increase.

Warning: Monitoring programs can be time-intensive, and may require extensive training, expensive equipment or technical expertise. Sharing monitoring equipment with other nearby watershed programs may help to reduce costs.

Approach: A detailed monitoring and maintenance plan is provided in Chapter 9 of the Plan. This section of the Plan details three related monitoring programs. First, a routine monitoring program is proposed to evaluate in-stream conditions through water quality and aquatic macroinvertebrate sampling and habitat assessments. Routine monitoring is conducted at a fixed station throughout the watershed on an annual or biannual basis. In addition to routine monitoring, an early warning monitoring program is proposed to detect changes in sensitive high-quality streams. The early warning monitoring program primarily involves looking for small, headwater changes such as increases in bank erosion and stream temperature, which may indicate urban development is affecting these sensitive areas. Chapter 9 includes a plan for monitoring structural BMPs to ensure their continued function.

Chapter 6 PLAN IMPLEMENTATION

The watershed based planning process involves a series of consecutive steps, from assessment of existing conditions through community engagement and goal setting that result in an actionable Plan. This chapter outlines the detailed steps, termed "management actions," to implementing the Plan. The first section of the chapter discusses how subwatersheds have been targeted for implementation, stressing the need to focus management actions in particular areas of the watershed, rather than randomly implementing projects throughout the watershed. Focusing implementation in specific areas is central to demonstrating early success, building momentum, and attracting new sources of funding. The remainder of the chapter presents recommended management actions and further elaborates on the broad groups of implementation activities outlined in the management strategies discussed in the previous chapter. Table 15 lists the management actions associated with each management strategy; lists suggested parties responsible for the implementation of management actions; defines short-, medium-, and long-term interim milestones for management actions; and provides performance criteria through which the implementation of specific management actions can be measured.

SUBWATERSHED TARGETING

Subwatershed targeting focuses implementation efforts in sensitive areas and those that generate significant NPS pollution. Of the 16 subwatersheds in the greater Five Mile River Watershed, six were targeted for implementation efforts based on the ranking method described below. These six subwatersheds included areas that drain to small headwaters, drinking water source areas, and portions of the Main Stem with the highest per unit area pollution loading. Three additional subwatersheds were added based on poor habitat condition or "areas of friction" observed during the existing conditions analysis (Chapter 2).

The targeting method incorporated two factors used to identify target areas for implementation: sensitivity and impairment. The sensitivity score measures the degree to which streams within and immediately downstream of a particular subwatershed are likely to be sensitive to changes in land use such as urban development. The sensitivity rating consisted of two measures of sensitivity: (1) stream order, which is a measure of the location of a particular stream within the overall stream network (small feeder streams have a low stream order, while large rivers have a high stream order); and (2) whether a subwatershed was source area to a drinking water reservoir. In short, the sensitivity rating favored small, sensitive steams upstream of drinking water sources.

The impairment score reflected the existing condition of streams within or immediately downstream of a particular subwatershed. Higher impairment scores reflected streams in more developed areas as measured by the percentage of the watershed with impervious cover and streams where computer modeling indicated high rates of pollutant loading.

Each of the 16 subwatersheds was assigned a final score by combining the sensitivity and impairment scores. In determining the final scores, the sensitivity score was weighted more highly than the impairment score. A detailed description of the subwatershed targeting metrics is provided in Table 13. Table 14 presents scores for each subwatershed.

Table 13. Subwatershed Targeting Metrics

Targeting Score	1	2	3
Drinking Water Source	Does not drain to a drinking water source	Drains indirectly to a drinking water source	Drains directly to a drinking water source
Stream Order	Less than 50 percent of the stream length is 1st order	50 to 99 percent of the stream length is 1st order	100 percent of the stream length is 1st order
Impervious Cover Score	Good	Fair	Poor
NO_3 Loading	Less than 1.9 lb/ac/yr	1.9 to 10.0 lb/ac/yr	Greater than 10.0 lb/ac/yr
Particulate P Loading	Less than 2.0 lb/ac/yr	2.0 to 3.9 lb/ac/yr	Greater than 3.9 lb/ac/yr
TSS Loading	Less than 500 lb/ac/yr	500 to 700 lb/ac/yr	Greater than 700 lb/ac/yr
Indicator Bacteria Loading	Less than 240 billion cfu/ac/yr	240 to 400 billion cfu/ac/yr	Greater than 400 billion cfu/ac/yr

IDENTIFIED TARGET SUBWATERSHEDS

The nine identified target subwatershed are depicted graphically in Figure 11. These include the six subwatersheds with the highest combined sensitivity and impairment scores (4, 8, 13, 14, 101, and 102). Three additional subwatersheds were included as target watersheds:

- *Subwatershed 11*—During the existing conditions analysis, observed conditions in subwatershed 11 were found to be significantly poorer than expected.
- *Subwatershed 12*—During field assessment efforts in subwatershed 11, conditions in the adjacent subwatershed 12 were observed and found to be poorer than expected.
- *Subwatershed 1 (Keeler's Brook)*—Keeler's Brook was included as a target subwatershed because it was identified by stakeholders as a problem area.

IDENTIFIED MANAGEMENT ACTIONS

The Plan proposes a series of management actions, which include the development of structural and non-structural BMPs (discussed below), implemented through a variety of monitoring and education/outreach programs, as well as broader policy initiatives. Management actions (Table 15) are associated with each management strategy proposed in Chapter 5. In some cases, similar management actions apply to multiple strategies; these instances are cross-referenced in the table text. Many management actions identified by the Plan support multiple goals. This integrated approach acknowledges that the management goals identified in the Plan are related to one another and that implementation actions often have multiple benefits. In addition to providing a

brief description of the management action, Table 15 provides a suggested schedule, implementation milestones, and quantitative or qualitative performance criteria for each management action.

Successful implementation will rely on a collaborative effort that brings together the shared knowledge and experience of the participating organizations. Accordingly, Table 15 also recommends organizations that would be well suited to implement each of the management actions, including a range of state, municipal, and NGO partners. Organizations were identified for implementation activities based on their legal authority, mission, and/or prior work in similar areas.

Table 14. Subwatershed Targeting Scores

Metric Ranking								
Importance rank (IR)*	1	2	3	5.5	5.5	5.5	5.5	
Normalized rank**	0.25	0.21	0.18	0.09	0.09	0.09	0.09	
Subwatershed Scoring								
Subwatershed	**Drinking Water Source**	**Stream Order**	**Impervious Cover Score**	**NO_3 Contribution**	**Particulate P Contribution**	**TSS Contribution**	**Indicator Bacteria Contribution**	**Overall Score**
4 (Holy Ghost Father's Brook)	0.25	0.642	0.537	0.267	0.089	0.089	0.267	2.141
101 (Lower Main Stem)	0.25	0.642	0.537	0.267	0.089	0.089	0.267	2.141
14 (Headwaters)	0.75	0.428	0.179	0.178	0.178	0.267	0.089	2.069
13	0.75	0.642	0.179	0.089	0.178	0.089	0.089	2.016
102 (New Canaan Center)	0.25	0.214	0.537	0.178	0.267	0.267	0.267	1.98
8	0.25	0.428	0.358	0.178	0.267	0.267	0.178	1.926
9	0.25	0.428	0.358	0.178	0.267	0.267	0.178	1.926
6	0.25	0.214	0.537	0.178	0.178	0.178	0.267	1.837
1	0.25	0.642	0.179	0.178	0.178	0.178	0.267	1.802
11	0.25	0.428	0.358	0.089	0.267	0.267	0.089	1.783
3	0.25	0.214	0.537	0.267	0.089	0.089	0.267	1.713
103 (Father Peter's Brook)	0.25	0.214	0.537	0.267	0.178	0.089	0.267	1.658
7	0.25	0.214	0.358	0.089	0.267	0.267	0.178	1.623
2	0.25	0.428	0.179	0.267	0.089	0.089	0.267	1.534
5	0.25	0.214	0.358	0.089	0.089	0.089	0.089	1.357
12	0.25	0.214	0.179	0.089	0.178	0.267	0.178	1.355

*IR of 1 is highest priority and the IR for metrics of equal priority are averaged;

metrics with equivalent importance are assigned an average importance rank

**Normalized rank = (7 - IR + 1) / 28

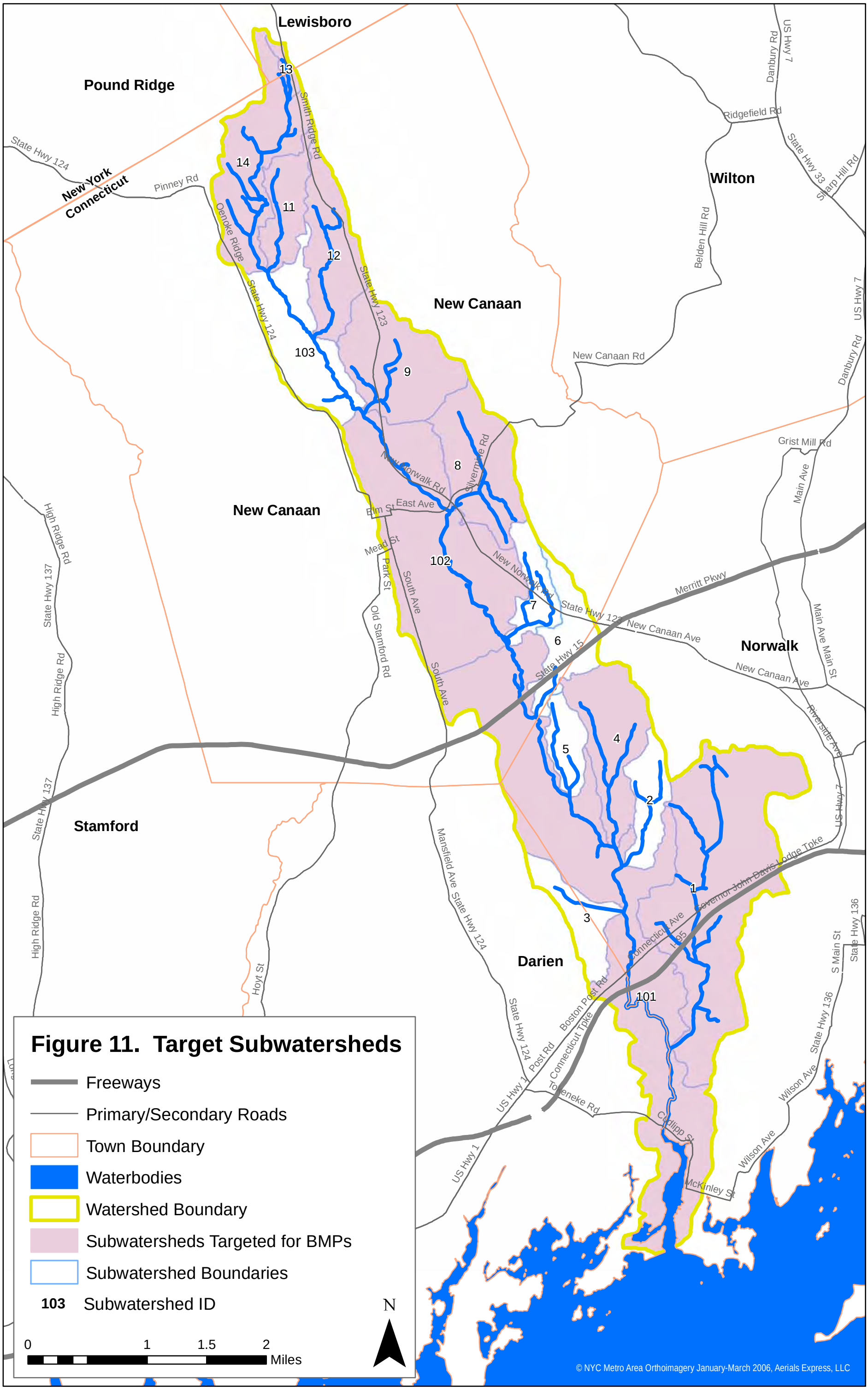
Lewisboro
Pound Ridge
New York
Connecticut
Wilton
New Canaan
Norwalk
Stamford
Darien
13
14
11
12
103
9
8
102
7
6
5
4
2
1
3
101
Smith Ridge Rd
Oenoke Ridge
State Hwy 124
State Hwy 123
Pinney Rd
State Hwy 124
Danbury Rd
US Hwy 7
Ridgefield Rd
State Hwy 33
Sharp Hill Rd
Belden Hill Rd
New Canaan Rd
Danbury Rd
US Hwy 7
Grist Mill Rd
Main Ave
Silvermine Rd
New Norwalk Rd
East Ave
Elm St
Mead St
Park St
South Ave
Old Stamford Rd
High Ridge Rd
State Hwy 137
Merritt Pkwy
State Hwy 123
New Canaan Ave
Main Ave Main St
Riverside Ave
US Hwy 7
Governor John Davis Lodge Tpke
Connecticut Ave
I-95
Boston Post Rd
Post Rd
State Hwy 124
US Hwy 1
Tokeneke Rd
Cudlipp St
McKinley St
Wilson Ave
State Hwy 136
S Main St
Mansfield Ave State Hwy 124
Hoyt St
Figure 11. Target Subwatersheds
Freeways
Primary/Secondary Roads
Town Boundary
Waterbodies
Watershed Boundary
Subwatersheds Targeted for BMPs
Subwatershed Boundaries
103 Subwatershed ID
N
0
1
1.5
2
Miles
© NYC Metro Area Orthoimagery January-March 2006, Aerials Express, LLC

Table 15. Implementation of Management Goals, Strategies, and Actions

MANAGEMENT STRATEGIES	MANAGEMENT ACTIONS	MANAGEMENT GOALS: Enhance stormwater management	Improve water quality	Protect and enhance wildlife habitat	Increase awareness and stewardship	PARTICIPATING ORGANIZATIONS: Harbor Watch/River Watch	CTDEEP	Trout Unlimited	West Norwalk Association	Southwest CT Conservation District	City of Norwalk	Town of New Canaan	Town of Darien	SNEW	UConn Cooperative Forestry Extension	CT Department of Transportation	Norwalk Land Trust	NRCS	UConn CLEAR & NEMO	SCHEDULE	INTERIM MILESTONES	PERFORMANCE CRITERIA
1. Avoid future increases in stormwater related impacts through adoption of low impact development policies																						
1.1	Review existing land use regulations and standards to identify barriers to implementation of LID elements, and modify municipal regulations to promote LID watershed-wide.	x						x			x	x	x							Pilot (1-5 yrs)	Year 1: Determine code sections for comparison (setbacks, buffers, lot size/density, street width, parking lot size, stormwater management, LID provisions, etc.; Year 2: Review code for Darien, New Canaan and Norwalk; Year 3: Complete evaluation; Year 4-5: Modify municipal regulations as needed to encourage density, limit new impervious areas, and create incentive for retrofits.	Number of watershed municipalities evaluated/implementing controls (target = 3)
1.2	Identify medium to high density residential areas that can be targeted for roof leader disconnection/rain barrel program.	x			x			x			x	x	x							Pilot (1-5 yrs)	Year 1-3: Evaluate zoning and property records in Norwalk, New Canaan, and Darien; Year 4-5: Track programs implemented by subwatershed.	Acres of watershed evaluated; Number of properties disconnected/rain barrels installed.
1.3	Promote reduction of rooftop runoff with residential BMPs/rain barrel/disconnection program development (see 7.3, 7.10).	x			x	x		x	x		x	x	x							Pilot (1-5 yrs)	Year 1: Define goals and strategies of residential BMP program and secure funding; Year 2: Purchase pilot rain barrels, and initiate outreach to owners of the 100 largest homes (by footprint); Year 3-4: Create incentive program and expand outreach to all homeowners in a single subwatershed; Year 5: Install 50 or more BMPS within a target subwatershed, and begin to expand the program to additional target subwatersheds.	Numbers of residential BMPs installed.
1.4	Promote "green streets" through the use of bioretention practices along state and local roads.	x					x				x	x	x			x				Mid-term (5-10 yrs)	Create an inventory of degraded roadside wetlands in the watershed, and present to DOT; Conduct a drive-through assessment of roadside sites for proposed bioretention (aerials may not be useful); Partner with DOT to establish guidelines for new roads and maintenance/repair of existing roads.	Acres of the watershed assessed for new bioretention; Number of roadside wetlands surveyed.
1.5	Create a model LID ordinance to promote LID practices watershed-wide.	x			x						x	x	x						x	Mid-term (5-10 yrs)	Outline consistent approach to MS4 compliance for watershed municipalities; Establish minimum stormwater and LID controls, including controls for water quality and channel protection; Design ordinance to require some or all of the following: tree mitigation, limited road widths and parking space sizes, flexible set backs/cluster incentives, limited development on steep slopes, and conservation design criteria (for siting, clearing, and earthwork practices).	% MS4 compliance; % adoption of ordinance.
1.6	Incorporate LID into municipal improvement projects and construction.	x									x	x	x							Mid-term (5-10 yrs)	Where pavement improvements are needed in low-traffic areas, replace traditional pavement with a porous alternative; Encourage external roof leaders for new buildings; Redirect pipes/outfall structures to bioretention areas.	Number of maintenance/construction projects incorporating LID techniques.

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1.7	Encourage LID practices for all new development and major renovations to ensure no net increase in runoff, with special attention to headwaters and tributary streams.	x								x	x	x							x	Long term (10-20 yrs)	Establish water quality volume and minimum disturbance criteria for residential and non-residential development; Establish design criteria using CTDEEP's Stormwater Design Manual as a starting point; Build support for increased regulations at the municipal level; Direct the the most stringent controls at headwater regions (subwatersheds 13 and 14) and small tributary subwatersheds draining to the Main Stem.	Number of watershed municipalities implementing controls (target = 3).
1.8	Encourage progressive, watershed-friendly zoning and development ordinances	x	x	x						x	x	x			x					Long term (10-20 yrs)	Emphasize clustered, transit-oriented development patterns through zoning alterations; Advocate for improved public transit options in targeted downtown areas where feasible; Implement requirements consistent with the model ordinance described above (see 1.5).	Number of watershed municipalities that update zoning (target = 3).
2. Reduce nonpoint source pollution, peak flow rates, channel erosion, and flow stress through implementation of structural BMPs in developed areas																						
2.1	Implement 1-2 surface storage BMPs identified in subwatershed 102 (New Canaan Center).	x									x									Pilot (1-5 yrs)	Year 1: Select BMP sites and obtain letters of support from property owners and agencies; Year 2: Obtain funding and initiate permitting; Year 3: Select consultant and complete detailed design; Year 4: Complete construction and permitting; Year 5: Conduct monitoring at inflow and outflow points, and evaluate functionality.	Acres of impervious area managed; Modeled N, P, TSS, and bacteria load reduction.
2.2	Implement one or more basin retrofit BMPs identified in subwatersheds 101 (Lower Main Stem) or 102 (New Canaan Center).	x								x	x									Pilot (1-5 yrs)	Year 1: Obtain letters of support from property owners and agencies; Year 2: Obtain funding and initiate permitting; Year 3: Select consultant and complete detailed design; Year 4: Complete construction and permitting; Year 5: Conduct monitoring at basin inflow and outflow points, and evaluate functionality.	Acres of impervious area managed; Modeled N, P, TSS, and bacteria load reduction.
2.3	Develop an inventory of publicly-owned lands suitable for implementation of structural BMPs.	x					x			x	x	x				x				Pilot (1-5 yrs)	Year 1: Obtain property records and conduct desktop assessments of all public properties within the watershed for drainage direction and available open space; Year 2: Prioritize sites based on feasibility, and conduct field assessments to determine drainage areas and need for additional piping; Year 3-5: Develop costs for each proposed BMP, and prioritize by cost per square foot of impervious managed.	Number of properties assessed; Feasibility of proposed BMPs.
2.4	Implement remaining identified BMPs, and assess potential for additional BMP sites.	x								x	x	x								Mid-term (5-10 yrs)	Obtain additional funding; Implement BMPs in subwatershed 102 (New Canaan center), subwatershed 1 (Keeler's Brook), and subwatershed 101 (Lower Main Stem).	Acres of impervious area managed; Modeled N, P, TSS, and bacteria load reduction.

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2.5	Identify and implement additional BMPs focused in targeted subwatersheds or areas draining to impaired stream segments.	x								x	x	x								Long term (10-20 yrs)	Obtain additional funding; Implement BMPs in additional target subwatersheds (8, 11, 12, 13, 14).	Acres of impervious area managed; Modeled N, P, TSS, and bacteria load reduction.
3. Limit nutrient and bacteria sources from large properties																						
3.1	Limit the use of fertilizers on municipal property (see 7.5).			x						x	x	x								Pilot (1-5 yrs)	Year 1: Conduct soil tests at all municipally-maintained green space; Year 2: Based on test results, establish minimum/maximum quantities of fertilizers to be used at each site, and incorporate into existing maintenance plan; Year 3-5: Train program managers and landscape staff to implement the new fertilizer targets.	Total reduction in annual N and P inputs (lb/yr).
3.2	Develop pet waste management program for public recreation sites.				x					x	x	x								Pilot (1-5 yrs)	Year 1: Outline goals and strategies of program, and inventory existing outreach/incentives; Year 2: Select public sites, and define solutions (signage, baggies, etc.); Year 3-5: Deploy outreach/incentive strategies at selected sites, and establish enforcement measures.	Estimated number of dog owners reached; Number of sites selected for management; Estimated bacteria load reduction.
3.3	Significantly reduce nesting populations of non-migratory Canada geese.		x				x		x	x	x	x	x							Pilot (1-5 yrs)	Year 1: Implement stream buffers wherever possible to limit access to open water habitat; Year 2-5: Define additional acceptable strategies for management as needed (controversial options include hunting, harassment by dogs, and limiting the viability of eggs).	Number of sites addressed; Estimated number of geese.
3.4	Limit overuse of fertilizers and encourage stream buffers on golf courses and other large turf areas (see 7.10).	x	x	x	x	x		x	x	x	x	x								Mid-term (5-10 yrs)	Conduct outreach and obtain owner permission to address nutrient and bacteria loading (see action 7.10); Conduct soil testing to determine how much fertilizer is required; Develop nutrient management plan to prescribe quantities of each type of fertilizer; establish low buffer plantings to filter runoff and limit colonization by non-migratory Canada geese.	Number of properties committed to improving management techniques; Estimated N, P, and bacteria load reductions.

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3.5	Encourage sustainable management at small farms.	x	x	x	x	x		x	x	x	x	x	x								Mid-term (5-10 yrs)	Conduct outreach and obtain owner permission to address nutrient and bacteria loading (see action 7.10); Advocate for alternative management techniques to improve manure management, limit livestock access to streams, and promote the adoption of buffers wherever feasible.	Number of properties committed to improving management techniques; Estimated N, P, and bacteria load reductions.
3.6	Encourage better management of small ponds and impoundments.	x	x	x	x	x		x	x	x	x	x	x								Mid-term (5-10 yrs)	Select target sites; Advocate for stream buffers, dam removal where appropriate, goose management, and reductions in fertilizer use; Offer training for property owners (see 7.3); Provide free labor in the form of volunteer work days/cleanups, etc.	Number of properties committed to improving management techniques; Number of dams removed; Estimated N, P, and bacteria load reductions.
4. Improve riparian habitats and protect undeveloped areas within the watershed																						
4.1	Determine feasibility of bank restoration/storage projects from Riverbank Ct. upstream to crossing with Lambert Rd.			x			x					x						x		Pilot (1-5 yrs)	Year 1: Obtain funding and project feasibility evaluations; Year 2: Select consultant and complete field work; Year 3: Complete modeling; Year 4: Pending feasibility, complete detailed design and initiate permitting; Year 5: Complete construction and permitting.	Modeled decrease in water surface elevations; Acres of riparian habitat restored.
4.2	Determine feasibility of bank storage/floodplain reconnection just below the Merritt Parkway, and in the area surrounding Millard Pond.			x			x				x							x		Pilot (1-5 yrs)	Year 1: Obtain funding and project feasibility evaluations; Year 2: Select consultant and complete field work; Year 3: Complete modeling; Year 4: Pending feasibility, complete detailed design and initiate permitting; Year 5: Complete construction and permitting.	Modeled decrease in water surface elevations; Acres of riparian habitat restored.
4.3	Establish buffers at identified sites (Oak Hills Golf Course, Ledgebrook Condominiums, Puddin Hill Road).	x		x							x	x								Pilot (1-5 yrs)	Year 1: Obtain letters of support from landowners, and establish permitting/design needs, and secure funding; Sample downstream water quality for bacteria; Year 2: Select consultant, as necessary, and complete design; Year 3: Complete construction; Year 4-5: Monitor water quality and goose populations, and complete analysis.	Total area of buffers established; Estimated N, P, and bacteria load reductions.
4.4	Identify opportunities for acquisition and preservation of open space, especially undeveloped land adjacent to the river or within the 100 year floodplain.	x		x			x				x	x	x	x			x			Pilot (1-5 yrs)	Year 1: Create GIS database with all known undeveloped parcels adjacent to the river or within the 100 year floodplain; Year 2: Prioritize parcels based on location, current ownership, cost, and feasibility; Year 3-5: Reach out to property owners and arrange for easements or purchases.	Acres of preserved property adjacent to the stream.

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4.5	Maximize adoption of minimum buffers on remaining private properties.	x	x	x	x					x	x	x								Mid-term (5-10 yrs)	Create GIS database with all known unbuffered segments and prioritize buffers based on indicator bacteria load reductions; Implement outreach campaign for streamside homeowners to encourage volunteer projects (see 7.11); Modify development code if necessary to create minimum buffer requirements, and create incentive/stewardship program to encourage buffers.	Square feet of additional unbuffered areas identified; Square feet of buffers constructed; Estimated bacteria load reduction.
5. Identify and eliminate illicit discharges and improve solid and liquid waste management																						
5.1	Implement a watershed wide Illicit Discharge Detection and Elimination program.		x							x	x	x								Pilot (1-5 yrs)	Year 1: Create a storm system map; Year 2: Create an ordinance prohibiting illicit discharges, and a plan for detection; Year 3-5: Implement detection plan, with special attention to industrial facilities, car washes, dump sites, laundromats, and ageing residential properties (septics)	Number of watershed municipalities implementing plan (target = 3).
5.2	Secure funding for 'track-down' water quality monitoring efforts (see 8.2).		x			x	x			x	x	x								Pilot (1-5 yrs)	Year 1: Secure funding; Year 2: Secure field staff and equipment, and begin dry-weather reconnaissance at outfalls; Year 3: Complete outfall reconnaissance; Year 4-5: Conduct in-stream dry weather sampling for bacteria and nutrients (additional sensing equipment may be needed at sites where a septic plume is found).	Number of sites sampled; Quantity of funding secured; Number of man-hours spent tracking down impairments.
5.3	Develop an outreach program to publicize and promote proper septic maintenance and use (see 7.3).		x			x	x			x	x	x								Pilot (1-5 yrs)	Year 1: Establish goals, target audience, content, and schedule; Year 2: Require mandatory septic inspections for all deed transfers; Year 3-5: Reach additional audience through partnerships with local neighborhood organizations and civic groups (two workshops per year with similar attendance).	Number of events and audience reached.
5.4	Conduct an inventory of areas in each municipality where the greatest potential for poorly functioning onsite septic systems exists.		x							x	x	x								Pilot (1-5 yrs)	Year 1-3: Target properties for assessment based on spatial analysis of sewer type, soil type, depth to bedrock, proximity to stream, age of development, and additional municipal records as applicable; Year 4-5: Conduct targeted visual assessment during stream walks to ID failing systems.	Number of subwatersheds assessed.
5.5	Assess contribution of leaking septics to overall bacteria load, and develop a mitigation plan (see 5.1, 5.3, 5.4).		x			x		x		x	x	x								Mid-term (5-10 yrs)	Following the analysis outlined in action 5.4, conduct water quality monitoring in stream reaches near properties with a high likelihood of septic failure; Compare bacteria concentrations at these sites against concentrations taken in areas with a low likelihood of failure.	Number of parcels assessed.

Table 15. Implementation of Management Goals, Strategies, and Actions

MANAGEMENT STRATEGIES	MANAGEMENT ACTIONS	MANAGEMENT GOALS: Enhance stormwater management	Improve water quality	Protect and enhance wildlife habitat	Increase awareness and stewardship	PARTICIPATING ORGANIZATIONS: Harbor Watch/River Watch	CTDEEP	Trout Unlimited	West Norwalk Association	Southwest CT Conservation District	City of Norwalk	Town of New Canaan	Town of Darien	SNEW	UConn Cooperative Forestry Extension	CT Department of Transportation	Norwalk Land Trust	NRCS	UConn CLEAR & NEMO	SCHEDULE	INTERIM MILESTONES	PERFORMANCE CRITERIA
5.6	Implement a septic inspection and maintenance program.		x								x	x	x							Mid-term (5-10 yrs)	Implement leaking septic mitigation plan established during the pilot phase (3.3) through outreach, enhanced inspections, and/or incentive/cost share programs; Establish a municipal monitoring program for all residential and commercial properties.	Number of failing systems identified and replaced; Estimated N, P, and bacteria load reductions.
6. Reduce the frequency and severity of flooding																						
6.1	Building on the 2010 Milone & MacBroom report, develop additional structural BMP alternatives to decrease flooding in the Town of New Canaan and the Mill Pond area.	x										x								Pilot (1-5 yrs)	Year 1: Obtain funding; Year 2: Review existing plans, determine objectives, and select consultant to conduct analysis; Year 3-5: Complete BMP feasibility assessments with full hydraulic and hydrologic analysis for New Canaan's downtown district and the Mill Pond drainage area.	Acres of watershed assessed.
6.2	Building on the 2010 Milone & MacBroom report, conduct a similar analysis for the Five Mile River below Meeting Grove Lane.	x									x									Pilot (1-5 yrs)	Year 1: Obtain funding; Year 2: Review existing plans, determine objectives, and select consultant to conduct analysis; Year 3: Complete field work and modeling; Year 4-5: Establish volume reduction requirements and estimated project costs.	Acres of watershed assessed.
6.3	Add culvert & bridge improvements at Nursery Road and the Merritt Parkway Bridge (Milone & MacBroom 2010).	x					x					x				x				Mid-term (5-10 yrs)	Determine project scope, funding, and oversight in partnership with CTDOT; secure project funding; Complete construction and final permitting.	Modeled decrease (in ft.) in water surface elevations; Number of flood-related complaints following construction.
7. Encourage better stewardship of public and private lands by implementing education and outreach programs for homeowners and municipal officials																						
7.1	Identify appropriate areas for public access to the river that further conservation and awareness.				x		x			x	x	x	x	x			x			Pilot (1-5 yrs)	Year 1-2: Prioritize public park spaces adjacent to the river for use as "gateways" (Pinkney Park, Devil's Garden, Oak Hills Golf Course, Fox Run Open Space, Kiwanis Park, Mill Pond Park, New Canaan Country Club, New Canaan Reservoir property); Year 3-4: Identify and implement appropriate demonstration projects, signage, and events to promote conservation; Year 5: Address additional small park sites and private land for enhanced public access.	Number of river gateway sites designed; Number of audience members at ribbon cutting and other events; Estimated audience reached by promotional materials (press, television, radio).
7.2	Develop an intermunicipal partnership to implement the Plan, and hire a coordinator to assist with implementation.	x	x	x	x						x	x	x	x						Pilot (1-5 yrs)	Year 1: Establish a watershed compact or other Memorandum of Understanding (MOU) document to endorse watershed-wide planning efforts among the watershed municipalities; Year 2: Identify and obtain funding for a program coordinator; Year 3: Secure funding for programs and establish a regular schedule of meetings; Year 4-5: Implement pilot management actions.	Number of watershed municipalities represented by partnership (target = 3); Amount of funding secured for the watershed.

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7.3	Develop a series of workshops for homeowners, developers, engineers, land use attorneys, and golf course managers to encourage watershed-friendly landscape design and maintenance (see 1.3, 5.3, 7.10).		x	x	x			x		x	x	x	x		x		x		x	Pilot (1-5 yrs)	Year 1: Establish goals, target audience, content, and schedule; Year 2: Hold first workshop with attendance by 20-30 members of the target audience; Year 3-5: Reach additional audience through partnerships with local neighborhood organizations and civic groups (two workshops per year with similar attendance).	Number of events and audience reached.
7.4	Develop a training series for municipal officials to encourage LID strategies.		x	x	x					x	x	x	x				x		x	Pilot (1-5 yrs)	Year 1: Establish goals, target audience, content, and schedule; Year 2: Hold first LID workshop with attendance by municipal officials (New Canaan and Norwalk municipalities represented); Year 3-5: Develop additional workshop content and continue to schedule events (2 per year).	Number of events and audience reached.
7.5	Promote roadway and parking lot "good housekeeping" practices to Public Works, Parks Departments, and Boards of Education to maintain watershed friendly operations and practices (see also 3.1).				x						x	x	x							Pilot (1-5 yrs)	Year 1: Establish interdepartmental municipal task force; Year 2: Develop employee training modules for fleet and building maintenance, sand usage and cleanup, landscape maintenance, and proper waste disposal; Year 3-5: Conduct training sessions.	Number and completeness of training modules (see EPA guidelines for Good Housekeeping); Number of events and audience reached.
7.6	Engage volunteers in monitoring tasks.		x	x	x	x	x	x			x	x	x				x			Pilot (1-5 yrs)	Year 1-2: Conduct outreach to built volunteer support for monitoring efforts, and provide detailed training; Year 3-5: Deploy volunteers for grab sample collection and, where appropriate, visual inspections (maintain oversight and quality controls).	Hours of volunteer service secured; Number of volunteers.
7.7	Conduct email & social media campaigns to encourage stewardship of private property.				x				x	x	x	x								Pilot (1-5 yrs)	Year 1: Define message and target audience/s and obtain contact information; Year 2: Define media vehicles (radio/TV/internet/print); Year 3-5: Obtain web/social marketing consultant to develop graphics, refine message, and deploy campaigns.	Number of watershed citizens reached.
7.8	Develop a public service announcement for local radio and television stations				x		x			x	x	x	x							Pilot (1-5 yrs)	Year 1: Define message (target to address specific actionable goals, e.g. fertilizer use, pet waste, rain barrels, etc.); Year 2: Partner with local businesses to sponsor the announcement, and with local radio and television stations to record and schedule.	Estimated audience reached.

Table 15. Implementation of Management Goals, Strategies, and Actions

MANAGEMENT STRATEGIES	MANAGEMENT ACTIONS	MANAGEMENT GOALS: Enhance stormwater management	Improve water quality	Protect and enhance wildlife habitat	Increase awareness and stewardship	PARTICIPATING ORGANIZATIONS: Harbor Watch/River Watch	CTDEEP	Trout Unlimited	West Norwalk Association	Southwest CT Conservation District	City of Norwalk	Town of New Canaan	Town of Darien	SNEW	UConn Cooperative Forestry Extension	CT Department of Transportation	Norwalk Land Trust	NRCS	UConn CLEAR & NEMO	SCHEDULE	INTERIM MILESTONES	PERFORMANCE CRITERIA
7.9	Organize and promote priority stream-side clean up efforts.		x	x	x	x		x	x		x	x	x							Pilot (1-5 yrs)	Year 1: Select cleanup sites in conjunction with multiple other projects (gateways, ribbon cuttings, demonstration sites); Year 2: Partner with corporate human resource departments to obtain volunteers, and schedule multiple events within a single subwatershed.	Number of events conducted; Number of volunteers recruited.
7.10	Conduct personal outreach to the owners and managers of golf courses and small farms located within the watershed to promote improved nutrient management, stream buffers, and stabilization of any stream access points (see 3.4, 3.5).		x		x	x		x		x	x	x	x							Pilot (1-5 yrs)	Year 1: Select sites for outreach; Year 2: Produce two brochures, for golf course managers (information on stream buffers, soil testing, organic fertilizing practices, and goose management) and for managers of small farms (information on stream buffers, grazing practices, manure removal/covering, and goose management); Year 3-5: Partner with trusted community members to conduct personal outreach at select sites.	Number of properties committed to improving management techniques; Estimated N, P, and bacteria load reductions.
7.11	Foster a 'neighborhood-by-neighborhood' approach for restoration of stream reaches (see 7.1, 7.6, 7.9).	x	x	x	x	x		x	x		x	x	x						x	Mid-term (5-10 yrs)	Define target residential neighborhoods adjacent to the stream; Conduct outreach via social and recreational programs; Recruit homeowners to "sponsor" buffer restoration and plantings on their property; Schedule additional education and outreach events related to lawn care, pet waste, and septics.	Number of restoration projects implemented; Estimated N, P, and bacteria load reductions.
8. Implement a water quality monitoring program																						
8.1	Identify and secure funding for continued water quality monitoring.	x	x	x		x	x				x	x	x							Pilot (1-5 yrs)	Year 1: Identify funding opportunities; Year 2: Establish monitoring program; Year 3-4: Expand baseline assessment to include additional variables as needed; Year 5: Analyze program results and determine further needs.	Number of sites monitored for habitat, bioindicators, bacteria, N, P, TSS, and additional constituents if necessary; Duration of monitoring program.
8.2	Develop a volunteer-driven monitoring program to establish baseline conditions and begin early warning monitoring in headwaters (see 5.2 and Chapter 9).		x			x		x		x										Pilot (1-5 yrs)	Year 1: Begin assessment of baseline conditions at recommended sites throughout the watershed; Year 2: Engage volunteer groups for continued monitoring; Year 3-4: Expand baseline assessment to include additional variables as needed; Year 5: Analyze program results and determine further needs.	Number of sites monitored for habitat, bioindicators, bacteria, N, P, TSS, and additional constituents if necessary; Consistency of method.
8.3	Expand monitoring to include additional sites as needed (see Chapter 9); maintain data online via a live-streaming map application.		x			x		x		x										Mid-term (5-10 yrs)	Select additional headwater streams and segments lower in the watershed for monitoring, as needed; Extend monitoring program to incorporate additional segments; Provide data online using interactive mapping tools.	Number of sites monitored for bacteria, N, P, TSS, and additional constituents if necessary; Consistency of method; Numbers of volunteers engaged.

Emphasizing Best Management Practices

Whether it's building a stormwater rain garden that manages urban runoff, working with a hobby farm owner to install livestock fencing, or teaching a homeowner how to properly care for a septic system, the core of the implementation plan involves putting in place BMPs that result in measurable reductions in NPS pollution. BMPs include a range of project types that reduce the negative effects of unmanaged stormwater runoff and reduce NPS pollution. For the purposes of this Plan, BMPs are categorized as either structural or non-structural BMPs. Structural BMPs refer to physical, site-specific pollution reduction projects that include stormwater practices such as rain gardens, porous pavement, livestock fencing, and constructed wetlands as well as stream restoration and riparian buffering projects. Non-structural BMPs are not physical projects but equally important changes in behavior that result in NPS pollution reduction and watershed improvements. These include reductions in fertilizer use, proper septic system maintenance, and properly disposing of pet waste.

As part of a NPS reduction plan, the management actions presented in Table 15 rely heavily on a broad range of structural and non-structural BMPs. In addition, 19 specific structural BMP projects are recommended and described in Chapter 7. These BMPs were selected through a process of desktop identification and field vetting. Appendix A contains detailed site descriptions, costs, photos, and feasibility constraints associated with specific structural BMP projects.

Plan Phasing

Although full Plan implementation will likely require 20 or more years, the Plan emphasizes the use of interim milestones, including an initial five year pilot phase, to ensure consistent progress. The first five year implementation period will lay the foundation for future success through a combination of strategic planning, outreach, and small-scale management actions designed to test and demonstrate the long-term approach. As early success is crucial, short-term programs with clearly defined objectives may have a higher likelihood of success. This pilot phase is intended to be a testing, incubation, and capacity-building period in which small, manageable activities are implemented. Such actions may be single structural BMPs, or outreach activities such as training events or marketing programs. Once these smaller actions have been completed—typically near the end of the five year term—monitoring and assessments will provide a better understanding of which approaches need to be repeated or expanded to achieve long-term goals, and which need to be refined.

Pilot phase implementation activities may choose to focus on one of the target subwatersheds outlined earlier in this chapter. Implementation of multiple management actions in a single subwatershed during the five year pilot phase will likely yield the most measurable short-term resource improvements. Once opportunities in a particular subwatershed are exhausted and improvements have been documented, implementation activities can be replicated in other subwatersheds. This method is preferable to a more diffuse approach because it demonstrates a micro-scale version of the full implementation approach, allowing the approach to be tested and refined with limited funding. If a subwatershed-scale effort shows positive outcomes, it follows that similar methods will be successful at larger scales. In addition, this approach allows watershed partners to more powerfully demonstrate the early success that is so critical for building momentum and attracting long term funding.

At the end of the five year implementation period, watershed partners should engage in a brief, focused, strategic planning process to outline the implementation plan for the next five year period in detail. During the five-to-10-year, mid-term implementation period, successful management actions and approaches may be implemented on a broader scale, within other target subwatersheds. Major follow-on planning activities and pilot-scale implementation activities should be complete, and a clear path to achieving long-term goals may be established. Funding and monitoring goals should be clearly defined for the following 10 years, and refined metrics for measuring success in place.

Long-term (10 to 20 years) planning incorporates the outcomes from the evaluation, planning, and preliminary implementation that occurs during the initial 10-year period. During the long-term implementation period, the pace of project implementation is accelerated to reflect the gains in funding, capacity, technical "know how," and project delivery during the first 10 years of implementation. Long-term management actions and strategies identified in the Plan are designed to be refined based on success and lessons learned during the pilot and mid-term implementation periods. Accordingly, milestones and schedule are less precisely defined for the long-term implementation period.

Performance Criteria and Adaptive Management

Implementation of the Plan relies heavily on an adaptive management approach through which management actions are continuously refined and improved by evaluating past actions. In accordance with this approach, performance criteria were developed for each management action. In most cases, performance criteria do not represent prescriptive endpoints, but rather provide metrics with which to track outcomes over time. Water quality criteria are suggested generally for common NPS pollutant types (see Chapter 9 for a full discussion of water quality constituents and monitoring methods). In some cases, targets for performance criteria for the first five years have been defined (e.g., number of homes implementing rain barrels) though partners may feel free to adjust these targets based on their own resources and funding levels. Whether they adopt the targets set forth in the Plan or adjusted targets, partners should set realistic goals during the five year pilot phase that have a high likelihood of being achieved. Achieving even modest goals during the initial implementation phase will build momentum and enthusiasm, attract funding, and set the stage for wider implementation. At the end of the five year pilot phase, management actions implemented in the watershed may be evaluated and priorities for the next five years should be established. Regular evaluations and updates of the Plan will help to focus efforts and encourage long-term success.

Cost-Effective Implementation

With limited funding available, it is important to select management actions that maximize pollution reduction and other desired benefits while minimizing cost. While simple in concept, cost/benefit analysis can be difficult because of the uncertainty in determining pollution reduction and other benefits, particularly broad initiatives such as outreach programs targeting wide-spread behavior changes. When selecting structural BMPs, an understanding of unit costs (that is, cost per unit of pollution or unit of stormwater managed) is useful for concept-level planning. Structural BMPs can vary widely in the cost per unit pollutant removed. For instance, highly engineered practices such as green roofs have extremely high unit pollutant costs. On the other hand, simple projects such as riparian buffers, which require limited engineering, can be installed by volunteers without the use of

heavy equipment and tend to have much lower unit costs. Appendix B presents a list of potential watershed funding sources.

Tables 16, 17, and 18 summarize pollutant load reductions associated with many of the management actions recommended in the Plan. Load reductions associated with management actions that remove pollutants at their source are typically presented as absolute values (amount of bacteria kept out of the stream per prevented septic failure, etc.) and are presented in Tables 16 and 17. Structural BMPs function by intercepting stormwater runoff and removing a percentage of pollution from the water captured. For these BMPs, pollution reduction potential is typically presented as a percent reduction, which represents the fraction of pollutants removed from the treated runoff. Pollutant reduction efficiencies for common structural BMP types are presented in Table 18. In addition, literature values are available for some source control activities, such as riparian access control for livestock, and are also presented as percent reductions in Table 18. General ranges for capital and operations and maintenance (O&M) costs for various BMP types are presented in Table 19.

Table 16. Unit Pollutant Load Reductions from Non-Structural Best Management Practices

	Annual Load Reduction[1]			
Pollution Source	**TN (lb)**	**TP (lb)**	**TSS (lb)**	**Indicator Bacteria (billion cfu)**
One (1) Canada goose	12.05	10.68	N/A	2,660
One (1) dog—	6.72	0.88	N/A	408,800
One (1) malfunctioning septic system—repaired or upgraded	7.48	0.58	23.03	2,611,000
One (1) acre lawn—fertilizer use reduced by 50 percent	18.80	0.38	N/A	N/A

[1]All reductions derived using methodology outlined in Caraco 2002

Table 17. Grouped Pollutant Load Reductions from Non-Structural Best Management Practices

	Annual Load Reduction[1]			
Pollution Source	**TN (lb)**	**TP (lb)**	**TSS (lb)**	**Indicator Bacteria (billion cfu)**
Small flock of geese (10 geese)	120.5	106.8	N/A	27
100 people cleaning up after their dogs	672	88	N/A	408.8
10 homes conducting annual septic maintenance and repair	74.8	5.8	230.3	2,611,000
10 homes using ½ their normal amount of lawn fertilizer	376	7.6	N/A	N/A

[1]All reductions derived using methodology outlined in Caraco 2002

Table 18. Pollutant Reduction Efficiencies of Structural Best Management Practices
(updated from: NRWIC 2011[1])

		Water quality performance - Percent reductions			
BMP	**Source[2]**	**TSS**	**TN**	**TP**	**Bacteria**
Bioretention	CWP 2007	52	43	22	70
Constructed Wetland	CWP 2007	58	22	45	50
Dry Pond/Extended Detention	CWP 2007	61	25	17	30
Grassed Swale	CWP 2007	85	32	28	0
Riparian buffer	Modeled values (avg)	29	26	40	40
Infiltration	CWP 2007	89	42	65	not available
Livestock Riparian Access Control	Monaghan et al. (2007)	not available	not available	not available	22-35
Green Roof	CWP 2007	-	53	53	-
Porous Pavement	CWP 2007	90	70	48	70
Rain Barrel	CWP 2007	-	40	40	-
Wet Pond	CWP 2007	76	30	48	70

[1] Norwalk River Watershed Plan, 2011 (table 6-4)

[2]CWP (2007) National Pollutant Removal Performance Database (NRPRD): Version 3, 2007; median values. For permeable pavement, used infiltration practice data. Values are generally mass or load-based measurements of efficiency; NYSDEC Manual (2010): Just "phosphorus" and "nitrogen" are listed. Indicator bacteria is lumped; NYSDEC (2001) Table A.4 is from Appendix A of the 2001 manual. This appendix and table were removed in subsequent versions (2003 onward); CWP (2005) MD guide: A User's Guide to Watershed Planning in Maryland, CWP. Dry pond value assumes extended detention. For permeable pavement, used infiltration practice data; CWP (2008), Runoff Reduction Method (referred to as RR memo), CWP Runoff Reduction Method, 2008. Values are mean for Total Removal (considers change in concentration and volume).

Table 19. Capital and Operations and Maintenance Costs of Best Management Practices
(NRWIC 2011)

BMP	Unit	Capital Cost per unit ($)	O&M Cost per unit ($)
Wet Pond	Cubic Feet	5.1–8.5	0.9–1.5
Dry Pond	Cubic Feet	2.6–6.8	0.4–1.2
Bioretention	Cubic Feet	8–20	2–5
Riparian buffer[1] (grass)	Square Feet	0–.01	N/A
Infiltration[2]	Cubic Feet	5	2
Reforestation	Planted Tree	328	N/A
Rain Barrel	Gallon	7-8	-
Porous Pavement	Square Feet	6.2	0.8
Grassed Swale	Square Feet	0.56	0.2
Green Roof	Square Feet	20–28	5–7
IDDE	per program	$23,300-101,200 Initial Cost;	$43,000-126,500 Annual Cost;
Septic maintenance[3]	Per household	-	$1,500 to 4,000
Downspout disconnection3	Per household	$150 to 400	-
Livestock Riparian Access Control			
Education and outreach[3]	Per program	Cost will vary significantly examples include: $2,000 for advertising campaigns to in excess of $500,000 for a full program involving brochures, advertising, surveys, etc.	-

All PlaNYC (2008)except where otherwise noted
[1]EPA 2004, Chapter 6
[2] Maryland Cooperative Extension, Fact Sheet 774

Chapter 7 STRUCTURAL BEST MANAGEMENT PRACTICES

The management actions presented in Chapter 6 describe discrete steps required to the achieve Plan's management goals. Several of these management actions involve the design and construction of structural BMPs. This chapter identifies 19 structural BMPs that were identified and field vetted during the Plan development as potential first steps toward meeting the Plan's pollution-reduction targets. Feasibility was evaluated for each BMP through a desktop and field assessment process, which is described later in the chapter. Estimated costs, load reductions, and engineering feasibility considerations associated with each BMP are presented in Appendix A.

The structural BMPs described in this chapter do not represent an exhaustive list of project opportunities in the watershed. In fact, they probably represent a fairly small percentage of the total number of project opportunities in the Five Mile River Watershed. The structural BMPs identified do, however, represent some of the most compelling and cost effective opportunities that were identified during a formal desktop and field assessment process. In many cases, the structural BMPs identified represent a prototypical project type that could be replicated in other similar sites throughout the watershed.

Structural BMPs identified in this chapter are primarily geared toward achieving measurable pollution reduction goals. However, most projects can be designed to provide for multiple benefits. Meadow plantings in large extended detention areas can improve habitat for birds and small mammals. Rain gardens in public spaces can improve site aesthetics and, with some signage, become highly visible demonstration sites. BMPs constructed at or near schools can be planted and maintained by students, providing a unique extension of typical earth sciences coursework. In this way, the BMPs proposed here can be implemented in conjunction with multiple other management actions related to education, habitat, and promoting LID in the watershed.

Descriptions for each structural BMP are presented in Appendix A, and include:

- BMP type;
- Subwatershed;
- Order-of-magnitude cost estimate;
- Potential benefits;
- Probable permitting requirements;
- Site access;
- Ownership;

- Other constraints;
- Context and rationale;
- Existing conditions; and
- Design approach and feasibility.

STRUCTURAL BEST MANAGEMENT PRACTICE IDENTIFICATION

Structural BMPs (Table 20, Figure 12) were identified within target subwatersheds through a process of desktop reconnaissance and field investigations. The process of identifying target subwatersheds is described in detail in Chapter 6.

Desktop Analysis

A desktop analysis was used to identify feasible, low-cost and high-benefit pollutant reduction BMP opportunities located in target subwatersheds. Areas were flagged for further investigation if they exhibited any of the following characteristics:

- Large, unused open spaces adjacent to and downslope from developed areas;
- Existing stormwater management basins;
- Road crossings where, based on topographic contours and adjacent land use, road runoff appears to discharge into the stream;
- The potential for unstable stream reach locations based on land cover change over the past 26 years (based on data from the UConn CLEAR program);
- Denuded riparian buffers, particularly within high nutrient and sediment loading land uses such as golf courses and farms;
- Public lands such as schools, parks, and public golf courses with potentially available open space that could be used for stormwater treatment and demonstration BMPs; and
- Privately owned open spaces located downslope of significant developed areas.

Field Vetting

To further vet structural BMP opportunities, visual field assessments were conducted at areas identified during the desktop assessment. Investigations were conducted on June 6–8, 2011. The primary purpose of the field assessment process was to refine the type, location, and extent of pollutant reduction measures and to collect site-specific data pertaining to constraints, feasibility, cost, and benefit.

Information relating to the following features was collected at most sites:

- Existing infrastructure (conveyance, existing stormwater controls, presence of non-stormwater infrastructure, potential inflow and outflow locations);
- Site topography;
- Drainage characteristics;
- Land cover and use;
- Property ownership;
- Extent, nature, and location of pollutant sources or other issues;

- In-stream habitat and physical conditions;
- Existing uses and/or structural, regulatory, or infrastructural constraints; and
- Upstream/downstream conditions within the subwatershed.

New Canaan Structural Best Management Practice Concepts

Downtown New Canaan constitutes a large, developed area that eventually drains to the Main Stem of the Five Mile River near Mill Pond. Upstream of the downtown area, reports of flooding are limited, whereas downstream they are numerous. The downstream flooding problem highlights the need for improved stormwater management. Unfortunately, the downtown area is densely developed and has limited space for the type of large structural BMP often required for flood control. A structural BMP approach involving the use of multiple small BMPs in concert could improve water quality and possibly provide enough flood storage to improve the downstream flooding problem. Specifically, a series of structural BMPs including bioretention systems to manage stormwater from parking lots, small rain gardens, and "green streets" lined with planter boxes and tree trenches that manage stormwater could potentially offer enough combined flood storage to markedly improve flooding conditions downstream. While this project would involve a considerable investment, the flood control, town beautification, and water quality benefits could be substantial.

An alternative concept would involve the use of Mill Pond as a large-scale structural BMP. Topographic contours indicate that most of the downtown area drains regionally toward Mill Pond, which may be a better candidate than the downtown area for combined flood control/pollution reduction. The pond, which is located in line with the river, is currently impounded by a small dam. Wetlands adjacent to the pond have been visibly impacted by stormwater, particularly where outfall pipes from local developed areas discharge directly to the forest floor. Hydrologic analysis would be useful to determine what type of restoration, if any, would be useful to improve downstream conditions. Possible structural BMPs in the Mill Pond Area may include wetland and floodplain restoration, dam removal, and creation of additional flood storage.

Due to the considerable uncertainty associated with the concepts discussed above, load reductions and cost estimates have not been developed. The area is referred to as BMP Q in Table 20, and a feasibility study to further evaluate both the downtown and Mill Pond concepts is included in the management actions listed in Table 15.

Structural Best Management Practice Costs

The cost of structural BMPs for the Five Mile River Watershed range from $4,000 to $1,035,000. The total planning-level cost to implement all of the 19 identified structural BMPs is estimated at approximately $3,905,000. Structural BMP cost is generally related to the size of the impervious drainage area and hence the amount of pollution managed by the practice; however, some practices tend to be more expensive to construct for the same pollutant reduction benefit. While costs and benefits of implementation may vary widely, the following structural BMPs represent relatively inexpensive opportunities based on planning-level cost estimates:

- Ledgebrook Condominiums Buffer ($5,000)
- River Park Swale Retrofit ($38,000)
- Avalon Apartments Basin Retrofit ($19,000)
- South Salem Park Bioretention ($25,000)
- Puddin Hill Road Estate ($4,000)

ESTIMATED POLLUTANT LOAD REDUCTIONS

Estimates of pollutant load reductions were developed for each of the 19 structural BMPs included in Appendix A. The following section summarizes the method and assumptions used to obtain load reduction values, and presents annual reductions in NO_3, particulate P, TSS, and indicator bacteria associated with each BMP.

The WinSLAMM model was used to develop pollutant load reduction estimates for structural BMPs. As discussed in Chapter 2, this approach applies empirically derived pollutant loading values to local rainfall, soil, and land use data to calculated NPS loads. Due to modeling constraints, unit pollutant reduction estimates derived from literature values were used to estimate pollutant load reductions for stream restoration BMPs.

Table 20. Recommended Structural Best Management Practices

Subwatershed	BMP Name	BMP ID	BMP Type
1 (Keeler's Brook)	Colonial Village (NHA)	A	Naturalized surface storage basin
1 (Keeler's Brook)	Kendall Elementary School	B	Subsurface infiltration
1 (Keeler's Brook)	Oak Hills Park	C	Pocket wetlands, stream restoration, riparian buffer
1 (Keeler's Brook)	Ledgebrook Condominiums	D	Riparian buffer
101 (Lower Main Stem)	Costco/ Double Tree Inn	E	Retrofit existing storm water basin
101 (Lower Main Stem)	River Park	F	Retrofit surface storage swale
101 (Lower Main Stem)	Norwalk Community College	G	Naturalized surface storage basin
101 (Lower Main Stem)	Saint John's Cemetery	H	Naturalized surface storage basin
4 (Holy Ghost Father's Brook)	Fireside Ct. Cul-de-Sac	I	Bioretention
2 & 4 (Holy Ghost Father's Brook)	Fox Run Elementary School	J	2-3 naturalized surface storage basin or bioretention
102 (New Canaan Center)	Kiwanis Park	K	Naturalized surface storage basin
102 (New Canaan Center)	New Canaan YMCA	L	Naturalized surface storage basin
102 (New Canaan Center)	Saxe Middle School	M	Naturalized surface storage basin
102 (New Canaan Center)	Avalon Apartments	N	Retrofit surface storage basin
102 (New Canaan Center)	Smith Ridge Rd. Median	O	Naturalized surface storage basin
8	East Elementary School	P	Naturalized surface basin & bioretention
102 (New Canaan Center)	Mill Pond Park	Q	Wetland Restoration
13	South Salem Community Park	R	Bioretention
14 (Headwaters)	Estate at Puddin Hill Road	S	Riparian buffer

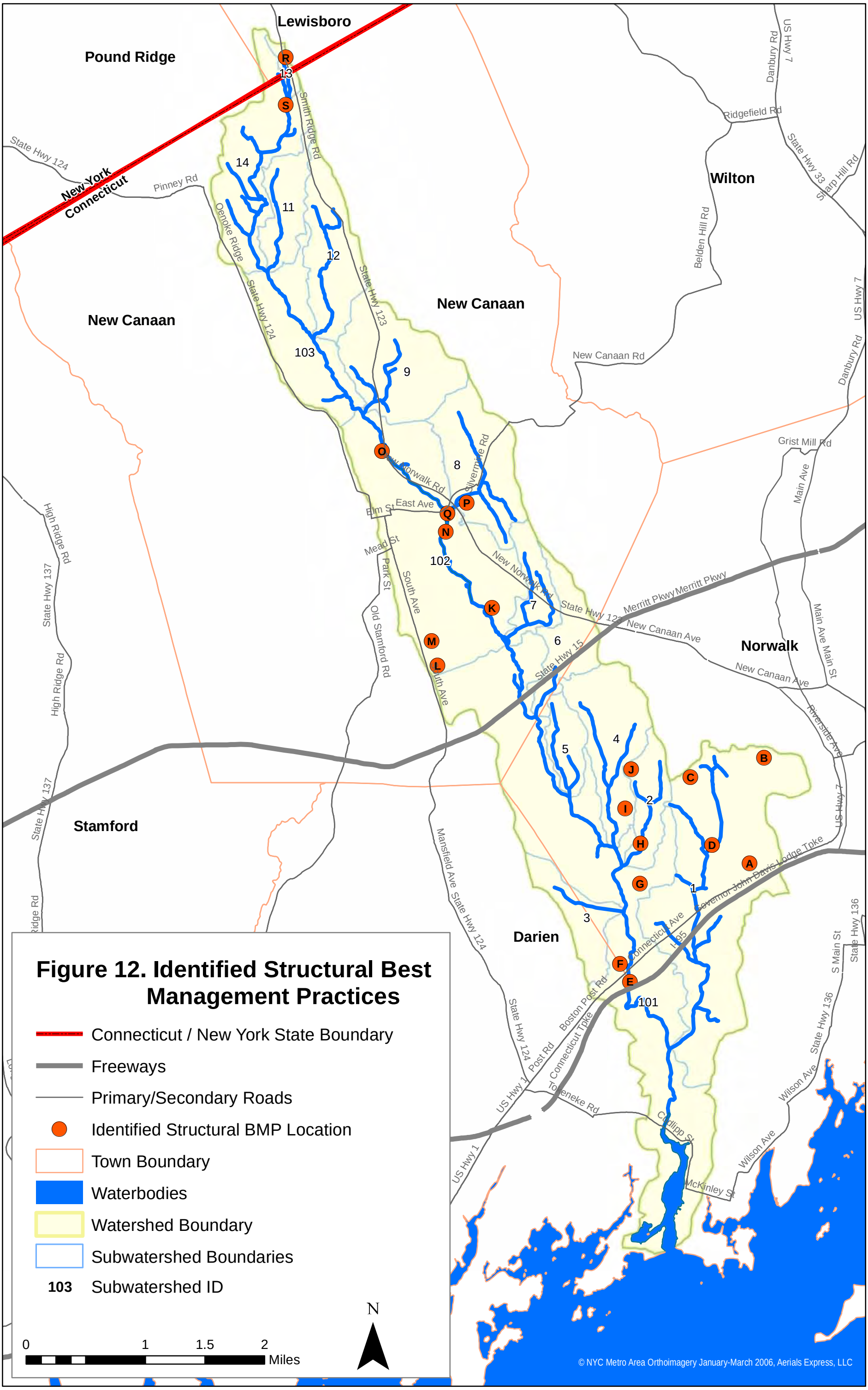

Figure 12. Identified Structural Best Management Practices

- Connecticut / New York State Boundary
- Freeways
- Primary/Secondary Roads
- Identified Structural BMP Location
- Town Boundary
- Waterbodies
- Watershed Boundary
- Subwatershed Boundaries
- **103** Subwatershed ID

N

0 1 1.5 2 Miles

Pollutant Load Reduction Estimates for Structural Best Management Practices

Field-vetted structural BMPs were modeled using WinSLAMM to determine estimated pollutant load reductions associated with each project. A detailed description of the WinSLAMM model and the rationale for its use in this study is provided in Chapter 2. For purposes of this chapter, WinSLAMM includes the capability to model pollutant reductions associated with structural BMPs. The following structural BMP types were modeled:

- Riparian buffer;
- Bioretention;
- Subsurface infiltration;
- Extended detention (referred to in Appendix A as "naturalized surface storage," since rates of infiltration may vary);
- Extended detention retrofit (referred to in Appendix A as "retrofit existing basin," since rates of infiltration may vary); and
- Grassed swale retrofit.

The first step in modeling pollutant load reductions was to develop concept-level designs for each structural BMP. Concept designs were developed based on the maximum structural BMP area available (as determined by site constraints), local soil conditions, and design guidance provided by the *Connecticut Stormwater Quality Manual* (CTDEP 2004). Drainage areas to each structural BMP were delineated based on a combination of contour data, field assessment, a review of aerial imagery and street view photography (www.googlemaps.com and www.bingmaps.com), and infrastructure mapping, where available. Drainage areas and BMP areas should be refined during the detailed design phase of any project that is implemented, and pollution loading values updated accordingly.

Source areas within each drainage area (areas with similar land use and soil characteristics) were also delineated. A delineation of source areas is required by WinSLAMM as a data input. The soil type and land use within each source area were defined based on the dominant soil type and land use within that area. Other inputs to the WinSLAMM model were developed according to the methods described in Chapter 2.

Using WinSLAMM, pollutant load estimates were determined for the drainage areas to each structural BMP. One model estimated the pollutant loading without the structural BMP, while a second model included the pollutant reduction effect of the structural BMP. The difference between the "with structural BMP" and "without structural BMP" models was used to compute the estimated pollutant load reduction expected from implementing each structural BMP.

Pollutant Load Reduction Estimates for Stream Restoration Best Management Practices

Data from a stream restoration project study of Spring Branch Stream in Baltimore County, MD (CBP 2006), were used to pollution reduction estimates for stream restoration BMPs. This study was selected for the following reasons:

- The study provided estimates of Total N (TN), TP, and TSS.
- Although conducted in the Chesapeake Bay drainage, the estimated pollutant reduction efficiencies for the Spring Branch Stream study may be applicable in suburban Piedmont watersheds underlain by crystalline bedrock. The Five Mile River Watershed is in the coastal

plain of Connecticut and is underlain by crystalline bedrock. These values have been applied to other coastal watersheds that are outside the Piedmont region (CBP 2006).

- Other studies and estimation methods have proposed larger reductions for TSS and TP (CBP 2006). For instance Evans et al., 2008, proposed reduction efficiencies of 36 and 95 percent for TSS and TP, respectively (Evans et al. 2008). Using the Spring Branch Stream values represents a conservative estimate for a metric that can be highly variable and lacks a large body of literature to develop more refined estimates.

The Spring Branch Stream Study found the following unit pollutant reductions for TSS, TP, and TN:

- TSS - 2.55 lb/linear foot(lf)/yr;
- TP - 0.0035 lb/lf/yr; and
- TN - 0.02 lb/lf/yr

For each stream restoration, the length of stream to be restored was measured using the software ArcGIS 10 and then multiplied by the load reduction rate for each pollutant. Indicator bacteria reductions are not typically associated with stream restoration.

Total Pollutant Load Reduction Estimates for Structural Best Management Practices

The total pollutant load reduction estimate for all 19 structural BMPs identified in the Plan was 56,587 lb/yr of TSS, 216 lb/yr of particulate P, 666 lb/yr of NO_3, and 58,404 billion cfu/yr of indicator bacteria. Pollutant load reduction estimates varied widely by site and pollutant. BMP B, Kendall Elementary School, is expected to produce the greatest decrease in TSS loads. BMPs O and M, the Smith Ridge Road median and Saxe Middle School, are expected to have the largest particulate P and NO_3 reductions, respectively. Implementation of BMP J, Fox Run Elementary School, is expected to produce the greatest reduction in indicator bacteria. These sites provide a starting point for identification and implementation of similar structural BMPs throughout the watershed.

Estimated pollutant load reductions for the 19 structural BMPs were lower than the total (100 percent) load reduction target or the interim (60 percent) targets defined in Chapter 3. Reductions associated with the structural BMPs represent approximately one (1) percent of the total target load reduction for both NO_3 and bacteria and approximately 13 percent and 20 percent of the total targets for particulate P and TSS, respectively (Table 21). These represent 2.1, 2.5, 21.3, and 33.5 percent of the interim targets, respectively, for NO_3, bacteria, particulate P, and TSS. Since the BMPs identified will not fully meet the interim or total load reduction targets, additional structural and non-structural BMPs will be needed in order to meet the goals of the Plan. For this reason, the Plan emphasizes an integrated approach to implementation using all of the varied management actions described in Table 15.

Table 21. Pollutant Reductions from Recommended Structural Best Management Practices

Structural BMP Name	Runoff Volume (cf/yr)	TSS (lb/yr)	Particulate P (lb/yr)	NO_3 (lb/yr)	Indicator Bacteria (billion cfu/yr)
A. Colonial Village; NHA	227,327	2,008	8.89	79.86	4,073
B. Kendall Elementary School	1,225,489	8,114	33.42	0	0
C. Oak Hills Park	195,227	1,984	3.22	8.75	3,545
D. Ledgebrook Condominiums	538,783	1,687	1.25	21.29	6,695
E. Costco	153,580	6,379	17.92	1.68	541
F. River Park	216,796	2,185	4.84	7.14	5,239
G. Norwalk Community College	170,883	3,796	7.84	3.23	2,172
H. St. John's Cemetery	123,150	1,761	7.30	26.30	1,081
I. Fireside Ct. Cul-de-Sac	112,291	793	3.11	21.11	1,808
J. Fox Run Elementary School	529,783	2,866	9.67	19.91	8,301
K. Kiwanis Park	220,977	2,570	8.09	65.88	3,380
L. New Canaan YMCA	164,320	2,121	8.70	21.12	885
M. Saxe Middle School	675,060	5,797	25.75	198.81	7,295
N. Avalon Apartments	35,436	568	1.72	10.16	266
O. Smith Ridge Rd. Median	758,473	7,502	38.35	160.26	6,134
P. East Elementary School	426,965	2,739	9.42	14.28	5,363
Q. Mill Pond Park*	NA	NA	NA	NA	NA
R. South Salem Community Park	47,157	486	1.51	1.69	1,167
S. Estate at Puddin Hill Road	54,267	3,232	25.28	4.35	461
BMP Totals	**5,875,963**	**56,587**	**216.28**	**665.81**	**58,404**

*This BMP could not be modeled in WinSLAMM due to scale and scope of potential work. A full hydrologic and hydraulic analysis is required to determine pollution reduction benefits.

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APPENDIX C

Five Mile River Commission
2016 Annual Report

Introduction

The purpose of this report is to provide the Town of Darien and City of Norwalk with a summary of the Five Mile River Commission's ("FMRC" or "Commission") operations for 2016, as required by the ordinances governing the Commission's activities. The report also includes the Commission's recommendations about possible changes to the current Darien and Norwalk ordinances governing the Five Mile River ("River") and its proposed 2017 budget.

Background

The FMRC is a state agency established by Connecticut statute with regulatory jurisdiction over the navigation, pollution and conservation of the River and its drainage basin. In addition, the Commission is guided by ordinances adopted by Darien and Norwalk regarding its oversight of the River. There are four Commissioners, two from Darien and two from Norwalk, who are appointed by the Governor of Connecticut. This equal representation recognizes that the River is flanked geographically on the west by Darien and on the east by Norwalk.

FMRC Commissioners

Matthew Marion, Chairman, 16 Harstrom Place, Rowayton, CT
John deRegt, 6 Vincent Place, Rowayton, CT
William Jessup, 122 Five Mile River Road, Darien, CT
Dirk Leasure, 94 Five Mile River Road, Darien, CT

FMRC staff

David Snyder, Harbor Superintendent, One Selleck Street, Norwalk CT
Tammy Papp, Administrative Assistant, 95-A Rowayton Ave., Rowayton, CT

FMRC meetings

Meetings are held in the Board Room of the Rowayton Community Center, 33 Highland Ave., Rowayton, Connecticut begining at 7:30 p.m. Scheduled meeting dates in 2016 were January 14, February 25, March 31, May 19, June 16, July 28, September 8, October 20 and December 8.

Scheduled meeting dates in 2017 are January 19, February 23, March 30, May 4 June 8, July 20, September 7, October 19, and December 7.

Highlights of the FMRC's Operations in 2016.

In January, representatives of the marinas and boat yards on the River attended the Commission's public meeting to discuss the newly instituted 2016 Ground Tackle Inspection and Certification Program, which formalizes the certification of ground tackle inspections and repairs for boats moored in the River. Prior to the meeting, the protocol and inspection form were emailed to the local marine service providers (MSPs) who will perform the inspections so they would have the opportunity to review and comment on the forms. Chairman Marion reviewed the protocol with the MSPs, noting that starting in 2016 all ground tackle must be inspected bi-annually outside of the normal boating season (i.e., prior to April 15th and after October 31st). Under the new program, MSPs will receive a Ground Tackle Inspection/Maintenance Form for each boat they service from the Harbor Superintendent. The form will be prefilled out with the mooring location and information related to the boat owner and covered boat. Upon completion of inspection/repairs, the inspector will certify the condition of the ground tackle and its adequacy for the covered boat, and return the form to the Harbor Superintendent, who will then arrange for the boat owner to certify separately the completion of the work and adequacy of the ground tackle for the boat. The MSPs reviewed and approved the new program.

In March of 2016, the Commission met again with the marinas and boatyards as well as representatives of Norwalk's and Darien's Marine Police. This annual public meeting represents an opportunity for interested stakeholders to raise issues of mutual concern related to the River. As a starting point, the marine police were invited to share their comments. After noting that they had no significant issues in the River last year, Darien officers indicated their marine patrols would start on May 1st, 2016. Contact procedures for emergency notifications were confirmed--boaters should call 911 or the Norwalk Marine Police on Channel 16. (As a backup, boaters can call the Norwalk Marine Police at 203.854.3076.) The Norwalk Marine Police encouraged everyone to report via email any boat operators (along with their boat's name and registration numbers) who violate the no wake zone restrictions in the River, and confirmed that photos and videos of the boat would be very helpful.

Next, Chairman Marion reviewed the ongoing implementation of the new ground tackle inspection program with the boatyards and marina operators, including the importance of completing inspections and the supporting paperwork as early as practicable in the season. All marina representatives confirmed they expected to meet the April inspection deadline, and that the program had achieved 100% compliance.

At the May meeting, the Commission discussed transient moorings off the community dock and the Rowayton Yacht Club at 151 Rowayton Ave. A $10 administrative fee was instituted to cover the annual ground tackle maintenance cost of each transient mooring, and the orange transient mooring buoys are to be

marked: “$10” and “203.852.8095” (the Harbor Superintendent’s mobile phone) The Harbor Superintendent is now monitoring and managing this mooring rental.

At the September meeting, the Harbor Superintendent confirmed he had notified all individuals on the 2016 mooring waiting list about the availability of moorings and that the wait list was now a clean slate for 2017.

In October, the Commission reviewed and discussed refinements to the ground tackle inspection program. For the 2017 Season, new mooring permit holders will be required to submit ground tackle inspections/certifications along with payment in order to receive mooring permits, and will then fall into the even year, bi-annual inspection cycle. In December of 2017, inspection forms will be supplied with mooring registration forms for the 2018 season. These forms must be completed and payment made before mooring permit stickers will be issued.

The Commission noted the retirement of its longstanding Harbor Superintendent, Ray Meurer, and the planned celebration of his years of service at City Hall. In addition, the Commission welcomed in-coming Harbor Superintendent David Snyder and discussed the appropriate transfer of duties.

At its December meeting, the Commission addressed the importance as well as the cost and mechanics of water quality testing in the River. This issue is expected to be one of the Commission’s main focuses in 2017.

As regards its financial results, the FMRC collected harbor use fees totaling $52,850 offset against operating expenses of $12,892.73, in 2016. Both results were in line with 2015 and as budgeted. (These fees are collected from all boats berthed at docks and those moored in the River, and are set aside for future maintenance dredging as well as the Commission’s day-to-day operating costs incurred to manage the River.) The use fee was paid by 333 (up from 318 in 2015) boat owners who kept their boats on moorings or at boatyard docks, marinas or private docks in the River.

As of December 31, 2016, the accrued dredging funds held by the Controller of the City of Norwalk on the Commission’s behalf totaled $685,025.10. Interest income for 2016 was $6,052.

The Commission’s budget for 2017 projects harbor use fee income of $54,000 and operating expenses of $11,000. In addition, the Harbor Superintendent anticipates approximately $700 in extraordinary expenses for mooring stickers, harbor signage, and buoy maintenance costs.

As regards mooring permits, the Harbor Superintendent issued 105 recreational boat permits and 3 commercial vessel permits in 2016. In addition, the Harbor Superintendent established an online wait list for prospective mooring permittees requesting suitable moorings (based on draft and location) in the River, and

cleared the former “paper” wait list based on available moorings. The current wait list application form is now available online, via the clerks’ offices in Norwalk and Darien, the libraries in Rowayton and Darien, and directly from the Harbor Superintendent.

The FMRC continued its practice of maintaining two “No Wake Zone” floating buoys in the River--one at the entrance to the harbor and a second 200 yards from the entrance--and a “No Discharge Area” buoy at the mouth of the River. It also maintained two Coast Guard-authorized private navigation aids, a red nun marked “4A” and a green can marked “5”, at the mouth of the River to support safe navigation. The two navigation aids are placed seasonally between April and November. Also, continuing the arrangement it set up in 2014, the FMRC maintained nine yellow buoys marked “kayaks” and “paddle” outside the western boundary of the federal navigation channel. The buoys form a trail designed to encourage kayakers and paddle boarders to transit the River safely away from marine traffic in the channel.

The Commission plans to advance a number of projects in 2017, including its continued assessment of the environmental health of the River, the timing/ logistics of proposed future dredging, and the suitability of the governing ordinances for the Commission’s regulatory activities and use fee collections on the River.

Signed,
Matthew Marion
Chairman, Five Mile River Commission

Tighe&Bond

APPENDIX D

FOR IMMEDIATE RELEASE

FROM: DARIEN ENVIRONMENTAL PROTECTION COMMISSION

RE: LEAF DISPOSAL IN WETLANDS AND WATERCOURSES

Darien, Connecticut

July 2016

Although it seems to be convenient, lawn clippings and leaves may not be deposited in any wetlands or watercourses in the Town of Darien. Deposits of yard debris impacts and degrades wetlands over time by creating filled areas over the soils that impair the wetlands' natural functions. Wetlands act as natural sponges that help control drainage and flood waters during periods of heavy rainfall, and slowly release water which lessens the effect of droughts. The use of these areas as dumpsites also prohibits the growth of valuable plant species. Leaf material and lawn clippings, once deposited in a watercourse, such as a pond or stream, begin to decompose. This decomposition process introduces excess nutrients and depletes the oxygen levels in the waters. This is a form of pollution that negatively impacts vegetation and wildlife in the waters of Darien and waters downstream, including the Long Island Sound. Other pollutants such as fertilizers and pesticides may also be contained within the leave and lawn clippings an will be released into the waters upon decomposition of the parent material. Dumping within streams, not only causes flood problems for downstream neighbors, but also contributes to the need for high cost dredging projects.

Property owners are cautioned to find proper methods of yard waste disposal or to speak with and correctly advise their yard maintenance contractor. Residents may visit the town website (*www.darienct.gov*) to learn about the Town's leaf pick-up schedule, which starts the first week in November.

It is illegal to discharge or deposit any material into the wetlands or watercourses of the Town pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Darien. Such activities are defined as regulated activities under Section 2.1y of the Regulations.

Residents are requested to dispose of their lawn clippings and leaves in an environmentally safe and legal manner.

Contact Information:

Richard B. Jacobson
Environmental Protection Officer
Darien Planning and Zoning Office
Room 211, Darien Town Hall
2 Renshaw Road
Darien, CT 06820
(203) 656-7351

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APPENDIX E

After the Storm

A Citizen's Guide to Understanding Stormwater

WHEN IT RAINS IT DRAINS

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is stormwater runoff a problem?

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

WHEN IT RAINS IT DRAINS

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

EPA 833-B-03-002

January 2003

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Stormwater Pollution Solutions

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

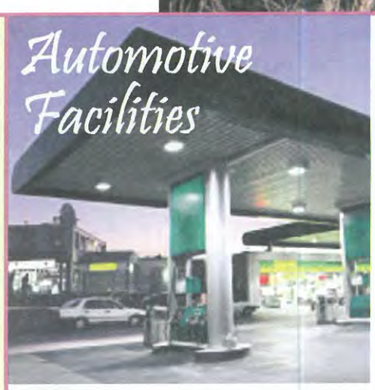
- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

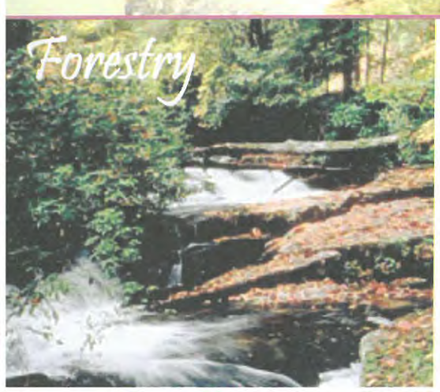
Automotive Facilities



Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

Forestry



Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

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APPENDIX F

DARIEN PARKS AND RECREATION
RULES AND REGULATIONS

Approved September 19, 2007
Revised, Approved July 20, 2011
Revised, Approved September 19, 2012
Revise, Approved October 16, 2013
Revised, Approved September 21, 2016

Pursuant to Section 42-21(a) of the Code of Ordinances, the Park and Recreation Commission has adopted these rules and regulations for the care, management and control of all parks and parkways owned by the Town. The official copy of these rules and regulations shall be kept on file with the Town Clerk and additional copies will be available in the Park and Recreation Commission Office, the Darien Public Library and the Darien Police Department.

Sec. 42-R23. Definitions.

Director means Director of Park and Recreation or his authorized agent.

Keg means any alcoholic beverage container with a capacity of two (2) liters or greater.

Park means a park or beach or any other area, owned or used by the town, and devoted to active or passive recreation (including an area temporarily devoted to recreational use, so long as that area is under the jurisdiction of the Park and Recreation Commission).

Sec. 42-R24. Park property.

(a) *Defacing property.* No person shall deface or damage any park property.

(b) *Climbing trees.* No person shall climb any park tree.

(c) *Picking flowers.* No person shall pick any park flower or other plant life unless approved by the Director in connection with an approved nature center course, study, or program.

Sec. 42-R25. Protection of wildlife.

No person shall willfully hunt, kill, trap, wound, frighten or capture any bird or animal in any park unless otherwise authorized by the Park and Recreation Commission.

Sec. 42-R26. Sanitation

(a) *Polluting waters.* No person shall throw, discharge, or otherwise place or cause to be placed in any park waters or in any park, storm sewer or drain flowing into such water, any substance which will or may result in the pollution of said waters.

(b) *Disposal of refuse.* No personal shall dump, throw, deposit or leave any refuse in any park except in the proper receptacles where these are provided; where receptacles are not so provided, all such refuse shall be carried away by the person responsible for its presence.

Sec. 42-R27. Traffic; parking permits.

(a) *Driving and parking.* No person shall drive or park any motor vehicle (or any motorized vehicle) in any park area except in designated driveways and parking areas, or such other areas as may on occasion be specifically designated as temporary parking areas.

(b) *Permits.* No motor vehicle (as defined in section 74-21. Parking) shall enter any park, as designated by the Park and Recreation Commission, unless it displays a valid permit issued by the Commission permanently affixed to the lower corner of the windshield using the stickers own adhesive. Darien residents or taxpayers may obtain a permit for a fee determined by the Commission. Such motor vehicle shall admit all occupants of such vehicle. Any person may obtain from the Commission a one-day special permit for parking and use of beach facilities for a fee determined by the Parks and Recreation Commission.

Sec. 42-R28. Recreational activities

(a) *Bathing and swimming.* Only permitted in designated waters. No person shall swim, bathe or wade in any park waters except in such places as are provided therefore, and in compliance with such regulations as may be adopted for such areas. (See addendum #1.)

(b) *Boating.* Privately owned boats or other floating crafts may be brought into any park, in accordance with regulations established by the Park and Recreation Commission. (See addendum #2.)

(1) Pear Tree Beach Boat Ramp is available for temporary placement of boats during the launching and recovery of boats. Boats must be removed from the dock within 15 minutes.

(2) Storage. No overnight storage of boats or boat trailers is permitted at any park location unless authorized by the Director.

(c) *Fishing.* No person shall fish in any park water except as noted in addendum #1 Section 9 or those designated by the Director. No person shall at any time fish in any area where bathing is permitted.

(d) *Camping.* No person shall camp or lodge in any park except at sites designated by the Director for that use and under such regulations as may be prescribed.

(e) *Hunting and firearms.* No unauthorized person in any park shall use, carry or possess firearms, explosives of any description, or other weapons potentially dangerous to human safety or wildlife, except in any area that may be designated by the Park and Recreation Commission.

(f) *Picnic areas and use.*

(1) Fires. No person shall light any fires except in fireplaces provided for that purpose or in areas designated by the Director.

(2) Duty of picnickers. No person shall leave a picnic area before his fire is completely extinguished and before his trash is properly disposed of.

(g) *Tennis and Platform Tennis.*

(1) No person shall play on any tennis court or platform tennis court except during hours designated by the Park and Recreation Commission.

(2) All users of tennis courts and platform tennis courts must abide by the specific rules and regulations established by the Park and Recreation Commission for the use of such courts and platforms. See addendum #3.

(3) Courts may be utilized only for the purpose for which they were intended/designed or for which purpose the Director may from time to time designate as appropriate.

(h) *Riding of Horses.* No person shall ride, lead or take any horse in any park except on trails designated for that purpose.

Sec. 42-R29. Miscellaneous regulations.

(a) *Beverages.* Consumption of alcoholic beverages is permitted in Designated areas. No person shall bring into any park any glass bottle or container.

(b) *Dogs in Parks.*

Except in a dog -area approved by this Commission, a portion of Cherry Lawn Park designated for unleashed dogs as provided in subsection (1), (2), and (3).- No owner or keeper shall bring any dog into any park unless the dog is on a leash or lead that is no more than 25 feet and under the control of its owner or keeper at all times. No owner or keeper shall bring any dog into any playground area in any park.

(1) **Cherry Lawn Park**: Dogs are not permitted in playground areas, community gardens, or playfields at any time. Dogs are permitted off leash or lead from September 1 to May 31 from dawn to 10:30 am Monday – Friday, dawn to 8:30 am Saturdays and Sundays. Dogs are permitted off leash or lead in the **Designated Area** between the Darien Nature Center and Brookside Road at all times. Dogs must be on leash or lead to and from the parking lot to the Designated Area. Dogs are permitted off leash or lead from June 1 to August 31 dawn to 8:30 am Monday – Sunday.

(2) Stony Brook Park and Diller Park: Dogs or other domestic animals are permitted off leash or lead at all times.

3) Tilley Pond Park: Dogs are permitted off leash or lead Monday – Friday from dawn to 10:30 am except during special events approved by the Commission.

4) Sellecks Woods Nature Preserve, Woodland Park Nature Preserve, Holahan Field, Town Hall Fields, Baker Park and McGuane Park: Dogs must be on leash or lead at all times.

5) Weed and Pear Tree Beaches: No dogs are permitted except for access to the Darien Boat Club.

6) These regulations shall not apply to guide or service dogs accompanying a disabled person.

7) No owner or keeper shall allow any dog to dig up, mutilate, deface or destroy any park property and shall promptly remove all feces left by the dog on park property and dispose of such feces in a sanitary manner.

(c) *Games of chance.* No person shall gamble, participate in, or bet on any game of chance in any park.

(d) *Going onto ice.* No person shall go onto any ice in any park waters except those designated as skating areas, and provided appropriate signage is posted.

(e) *Offensive conduct.* No person shall engage in threatening, abusive, insulting or indecent language, or engage in any disorderly conduct or behavior that breaches the public peace.

(f) *Selling.* No person shall sell, or offer for sale, any merchandise, article or articles whatsoever, in a park without written consent of the Park and Recreation Commission, or practice, carry on, conduct or solicit any trade, occupation, business or profession.

(g) *Handbills*. No person shall distribute any advertising matter in any park without the written consent of the Director.

(h) *Violations.* Any person or group who violates the provisions of 42.R29 (a) – (g), or any other rule and regulation as adopted by the Park and Recreation Commission may be denied the privilege of using the park.

Sec. 42-R30. Park Operating Policy.

(a) *Hours.* Except for unusual and/or unforeseen emergencies, beaches shall be open to the public every day of the year from sunrise to 10:00 p.m. Other park areas shall be open from sunrise to sunset. Groups using the park must specify the hours they wish to use the park. All persons shall remove their vehicles from the park prior to closing.

(b) *Permits to use parks.*

(1) Anyone wishing to use a park for a group event shall apply for a permit at least fourteen (14) days prior to day requested. A separate permit is required under section 42-R31 for alcoholic beverages in kegs.

(2) Application procedure. Permit application shall be filed with the Department of Parks and Recreation upon forms supplied by the Department seeking such information as is reasonably necessary for a fair determination as to whether a permit should be issued. Further application may be required to other boards, commissions, departments as may be determined by the Director.

(3) Standards for issuance.

i. That the proposed activity or use of the park will not unreasonably interfere with or detract from the general public enjoyment of the park.
ii. That the proposed activity and use will not unreasonably interfere with or detract from the promotion of public health, welfare, safety and recreation.
iii. That the proposed activity cannot reasonably be expected to incite violence, crime, or disorderly conduct.
iv. That the proposed activity will not entail unusual, extraordinary or burdensome expense or police operation by the town.
v. That the facilities desired have not been reserved for other use on the day and at the hour required in the application.
vi. That a certificate of public liability coverage for personal injury and for property damage is in force during the time for which the application is made. Liability insurance which names the Town of Darien as an additional insured, is required for groups using the park facilities over a given period of time on a periodic basis, or for such events the Director deems necessary.
vii. That arrangements have been made with the Police Department and/or Fire Department for the hiring of any supervision deemed necessary.
viii. Athletic Field scheduling will follow permitting requirements set by the Park and Recreation Commission. See addendum #4.
ix. Appeal. Within eight (8) days after receipt of an application, the Director shall apprise an applicant in writing of his reasons for refusing a permit and any aggrieved person shall have the right to appeal in writing within eight (8) days to the Park and Recreation Commission which shall consider the application under the standards set forth in subsection (b)(3) and sustain or overrule the Director's decision within fourteen (14) days. The decision of the Park and Recreation Commission shall be final.

(4) Effect of permit.

a. A permit holder shall be bound by all park rules and regulations and all applicable ordinances fully as though the same were inserted in said permit.
b. The permit shall cover the use of the described site only and shall not include permission to use any other area.
c. The permit shall only be valid for the date indicated. No area will be held for a postponement date.

(5) Liability of permit holder. The person or organization to which a permit is issued shall be liable for any loss, damage or injury sustained by any person. Such person shall be liable for any damage to any park or other town property.

(c) Park and Recreation Commission reserve the right to request a security deposit or bond and/or charge groups for the cost of any cleanup.

(d) *Violation.* Any person or group who violates the provisions of subsection 42-R30 (a) through 42-R30 (c) may be denied future permits.

Sec. 42-R31. Alcohol permits.

(a) *When required.*

(1) Any resident of the Town of Darien who is of legal drinking age may apply for an alcohol permit upon presentation of proof of residence and age to the Director or his/her agent. No person who has been found to have violated rules and regulation of the Park and Recreation Commission pursuant to Section 42-22 of the Code of Ordinances, may receive a alcohol permit. No person who has been cited for such a violation may receive a keg permit until such citation has been resolved.

(2) Where such an event is sponsored, funded, advertised or promoted by a corporation, partnership, club or association, or where an event is open only to members or employees of such an organization, the application shall so indicate. The sponsor shall be responsible for compliance with all permit standards; however, such sponsorship shall in no way limit or mitigate the responsibility of the individual permit holder.

(3) As part of the application, the applicant may designate a substitute, who shall be responsible for adherence to the standards of this section only in the absence of the permit holder. Such designated substitute shall meet all requirements for holding a permit as stated above in section 42-R30 (b) et seq.

(b) *Procedures.*

(1) Where a permit under section 42-R30 is required, any alcohol permit application must be filed simultaneously.

(2) Application shall be filed with the Department of Parks and Recreation upon forms supplied by the department seeking such information as is reasonably necessary for a fair determination as to whether a permit should be issued.

(3) As part of the application, each applicant must sign a statement agreeing not to supply alcoholic beverages to minors or intoxicated persons, exercise due diligence that such persons do not gain access to any alcoholic beverages, and not violate any state law regarding alcohol.

(4) No fee shall be charged for alcohol permits (see subsection (e)).

(c) *Standards.*

(1) All standards enumerated in section 42-R30 (b) (3)-(6); 42-R30 (c) shall be applied to all alcohol permit applications.

(2) The Director may only deny an alcohol permit for cause. Cause for denial of a permit shall be as follows:

a. Reservation by another applicant for the picnic area in question;

b. Breach of standards by the applicant during previous permitted events.

(3) In no event shall the presence of alcohol in and of itself be construed as a breach of standards.

(4) All denials of alcohol permits shall include a written statement of the reasons for denial and may be appealed using the procedures of section 42-R30 (b) ix.

(d) *Breach of standards.* Where the Director has reason to believe that any of the above standards have been breached, he shall so advise the Commission at its next regular meeting, and shall notify permit holder by registered letter.

(e) *Bond requirement and liability.*

(1) A bond in the amount of two hundred fifty dollars ($250.00) shall be submitted to the Department of Parks and Recreation at the time the keg permit is issued.

(2) Upon authorization by the Commission, the Director may deduct from the bond an amount sufficient to defray the costs of cleaning up the permit site if it has been found damaged or littered by the applicant, or to cover such costs associated with negligence as defined in subsection 42-R31 (e)(3).

(3) The permit holder shall be liable for any loss, damage or injury sustained by any person by whatever reason of negligence of the person to whom a permit has been issued, or by a person or persons who have become intoxicated by virtue of the failure of the permit holder to comply with Section 42-R31(b)(3). Such permit holder shall be liable for any damage to park or other town property.

(f) *Severability.* If any clause, sentence, paragraph or part of these rules and regulations, or the application thereof to any person or circumstances shall be adjudged by any court to be invalid, such judgment shall not affect, impair or invalidate the remainder thereof or the application thereof to other persons and circumstances, but shall be confined in its operation to the clause, sentence, paragraph or part thereof, and the persons directly involved in the controversy in which such judgment shall have been rendered.

ATTACHMENTS:

Addendum #1: BEACH RULES AND REGULATIONS
Addendum #2: BOATING REGULATIONS
Addendum #3: COURT RULES AND REGULATIONS
Addendum #4: ATHLETIC FIELD SCHEDULING
Addendum #5: WEED BEACH WARMING HUT RENTAL POLICY

ADDENDUM #1

DARIEN BEACH RULES AND REGULATIONS

The Darien Parks and Recreation Commission set the Beach Rules and Regulations. The Director of Parks and Recreation and Staff are responsible for carrying out the Rules and Regulations.

1. LIFEGUARDS AND ASSISTANT DIRECTOR

Lifeguards are generally on duty from approximately Memorial Day to Labor Day, from 10:00 a.m. to 6:00 p.m. on an annual calendar set by the Park and Recreation Commission. Immediate response to lifeguards and Assistant Director instructions is mandatory. In addition to the beach area, prompt responses to instructions are required also for all other beach facilities such as the bathhouses, parking lots and tennis and paddle court areas. Refusal to promptly acknowledge such instructions or to respond in

an impolite manner may subject resident to a review of beach privileges. If no lifeguard is on duty, swimming is at your own risk.

2. GATE SECURITY GUARDS

Gate security Guards are generally on duty between 9:00 am and 10:00 pm (Sec. 42-R30). All vehicles wishing to enter a beach must come to a complete stop at the beach gatehouse so that the gate security guard may confirm compliance with all relevant beach rules and regulations.

3. GROUP USE

On designated camp days, lifeguards are normally on duty starting at 10:00 a.m. Groups of children scheduled by permit to use the beach facilities are not to arrive any earlier than 10:15 a.m. There is no staff available to safeguard swim areas until that time. If a lifeguard is not on duty, one swims at their own risk.

4. RECYCLING OF REFUSE

All facility users will obey state recycling laws and separate refuse properly. Containers may be marked for separation. Failure to recycle into the proper container may result in a fine and/or review of beach privileges per Section 18 of these Beach Rules and Regulations.

5. TOWN ORDINANCES

All Town ordinances and rules and regulations pertaining to alcoholic beverages and littering will be strictly enforced.

Any improper driving or loitering in the parking area or vandalism to park property, may result in a fine and/or review of beach privileges.

6. PARKING

Cars must park as designated. The Town of Darien is not responsible for cars, boats or trailers in the park.

Loan or transfer of parking permit is not permitted. Loan or transfer of permits automatically forfeits the right to use the Darien beaches at resident rates. The length of forfeiture as well as a review of beach privileges will be determined by the Park and Recreation Commission.

7. VIOLATIONS OF TOWN REGULATIONS

Violations of prohibited activities will be strictly enforced and may result in the imposition of fines and/or revocation of resident beach privileges.

(a) Littering
(b) Rowdy behavior anywhere on park property
(c) Fire or cooking on the beach, except in designated areas where grills are located
(d) Dogs anywhere in park, either on beach or in cars (except Seeing Eye dogs)
(e) Ball or Frisbee playing on the beach
(f) Use of swim buoy or lifelines, except in emergency
(g) Children in water with inflatable tubes or floats of any kind, the sole exception being Coast Guard approved life flotation jackets, properly secured
(h) Use of scuba equipment, face masks, swim-fins, etc.
(i) Use of, sitting or walking on the beach rock jetty
(j) Gambling or consumption of illegal substances

(k) Nudity
(l) Glass container of any kind anywhere
(m) Verbal abuse of gateway security or lifeguards

8. RESIDENT GUESTS

Residents are responsible for his or her guests. Violation of any of the park rules and regulations by a guest may result in revocation of the responsible resident's beach privileges.

9. FISHING

There will be no fishing from any designated swimming, sailing, boating or rock jetty areas at Pear Tree or Weed Beaches. Fishing is encouraged at the picnic area off the south west side of Weed Beach, facing the Stamford Cove area.

10. SWIMMING

Swimming is permitted only in the areas designated by floating swim buoys. These are the only areas that have lifeguard coverage between the hours as described in Beach Rules and Regulations Section 1 above.

11. BEACH USE OF WATERCRAFT OTHER THAN DINGHIES

(a) The Pear Tree Boat Ramp Dock (launch dock) is available for the launching of boats only. The boat owner must stay within the immediate vicinity of his/her boat on the launch dock or the parking lot. Boats are to be removed from the launch dock within 15 minutes. There is no overnight mooring on the launch dock.

(b) Both Weed Beach and Pear Tree Beach are designated launching sites for light (Optimist, Sunfish, Laser, etc.) and ultra-light (sail board and wind surfer, boats and kayaks).

(c) Motorized personal watercraft (Jet Ski, Skidoo) are allowed to launch from designated launch areas.

(d) Permitted usage is daily only. There is no overnight storage of boats at Pear Tree or Weed Beach, other than those associated with the Junior Sailing Program and Town sponsored activities/programs and permitted dinghies at Pear Tree Beach for moored boat access.

(e) Light and ultra-light watercraft and kayak are defined as wind or human powered, can be carried on top of a car or trailed or carried into Weed or Pear Tree Beaches.

There are no motorized boating activities (other than small committee boats which are part of the Darien Junior Sailing Program) around the sailing and sail boarding areas of Weed Beach. There is no launching of motorized watercraft at Weed Beach other than jet skis, skidoo, etc.

12. STORAGE RESTRICTIONS

(a) All dinghies using the dinghy storage facility at Pear Tree Beach are for access to moored boats only. All other boats are to be trailed into and out of the beach daily. There is no overnight storage of watercraft on any town beach property other than above.

(b) Unauthorized boats stored overnight on the beach will be tagged with a notice, and will be removed by the Parks and Recreation Department three days

after notice has been placed on the boat. Such boat will be considered abandoned and will be removed by the Parks and Recreation Department for disposal.

13. INFLATABLE CRAFT

An inflatable craft is defined as a dinghy, unless it is motorized. Any motorized inflatable is considered a motorized watercraft, regardless of length, and is restricted to the motorized watercraft launching area of Pear Tree Beach.

14. WEED BEACH USE OF JET SKIS

Jet skis can only be launched at the southwest side of Weed Beach, facing the Stamford Cove area. Jet skis must observe the 5 mph speed zone within 50 feet of the designated swim buoys. Failure to observe the 5 mph speed zone, improper skiing near the designated swimming area or unsafe operation of the jet ski, will result in a fine and/or review of beach privileges of the responsible resident.

15. BOAT STICKERS

Wind or power water craft trailed into the beaches with a length of 12 feet or longer, must have a Darien boat launch sticker affixed to the water craft.

(a) Any water craft, wind or power, carried via trailer, must display a current Darien Boat sticker affixed to the craft or pays the daily entrance fee.

(b) Any water craft carried on or within a motor vehicle requires a current vehicle permit only.

(c) Annual Boat Launch stickers are available from the Parks and Recreation Department at Town Hall. The Parks and Recreation Commission will review the fee structure annually. Categories for stickers shall be as follows:

(**i**.) Non-resident boat daily in/out launch

(**ii**.) Resident boat season, in and out

16. BOAT TRAILERS

Boat trailers are to be parked in the designated trailer area during the day. There is no overnight storage of trailers or watercraft on trailers in the parking lots at either beach.

17. WINTER STORAGE

There is no winter storage for any personal property, boats, light or ultra-light watercraft (Optimist, sail boards, kayak, sunfish) or trailers on beach property. All boats are to be removed by November 15th of each year. Any property left after November 15th will be considered abandoned and will be removed by the Parks and Recreation Department for disposal.

18. FINES AND REVIEW OF BEACH PRIVILEGES

The purpose of the Beach Rules and Regulations is to preserve fair and safe usage and access to the Town of Darien beaches, while protecting the Town property for future usage.

Any person violating any section of the Town Rules and Regulations may be subject to:

(1) A fine determined by Code of Ordinance or other legal means as determined by the police;

(2) Suspension of beach privileges for a period of time as determined by the Director and/or the Parks and Recreation Commission;
(3) Loss of resident status.

On the basis of the severity of the violation, the Director of Parks and Recreation may bring violation(s) to the attention of the Parks and Recreation Commission.

Any person who has been found to have violated these Rules and Regulations may appeal directly to the full Parks and Recreation Commission regarding fines and changes in resident or resident household beach privileges.

ADDENDUM #2

DARIEN PARKS AND RECREATION
BOATING REGULATIONS

Boating. Pursuant to 42-R28(b), privately owned boats or other floating crafts may be brought into any park in accordance with regulations established by the Parks and Recreation Commission.

1. Pear Tree Beach boat ramp (launch dock) is available for temporary placement of boats during the launching and recovery of boats. The boat owner must stay within immediate vicinity of his/her boat on the launch dock or parking lot. Boats are to be removed from the launch dock within 15 minutes. THERE IS NO OVERNIGHT MOORING ON THE LAUNCH DOCK.

2. Light craft (Optimist, Sunfish, Laser…) and ultra-light craft (sail board, wind surfer, kayaks…) are permitted to launch from Weed or Pear Tree Beach from designated areas.

3. No launching of any craft from designated swim areas is permitted from Memorial Day to Labor Day without Parks and Recreation Commission approval.

4. No overnight storage of boats is permitted at any park location other than those associated with the Darien Junior Sailing Team at Weed Beach or those permitted at dinghy storage area at Pear Tree Beach, with permission of the Parks and Recreation Commission.

5. Boat Trailers. Boat trailers are to be parked in designated trailers areas during the day. There is no overnight storage of trailers or watercraft on trailers in the parking areas at either beach or in any other park location without permission of the Parks and Recreation Commission.

6. Winter Storage. There is no winter storage for any personal property, boats, light or ultra light watercraft or trailers in any park. Any property left after November 15 will be considered abandoned and will be removed by the Parks and Recreation Department for disposal.

7. Boats brought into Darien beaches on a trailer are required to display a valid Town of Darien boat sticker or pay applicable daily entry fee(s).

8. Storage for dinghy used to access moored boats is permitted at Pear Tree Beach in designated area. Vessels must be 19' in length or less for moored boat access only.

9. Vessels stored in the dinghy storage area must display valid permit issued by the Parks and Recreation Department. Vessels may be stored ONLY for the time determined by the Park and Recreation Commission.

10. Vessels in dinghy area must be affixed properly to the storage bar/rack to avoid damage in the event of an unforeseen emergency.

ADDENDUM #3

DARIEN PARKS AND RECREATION
COURT RULES AND REGULATIONS

Tennis and Courts. Pursuant to 42-R28(g), no person shall play on any tennis court or paddle tennis platform court except during hours designated by the Parks and Recreation Commission. All users of Darien tennis courts and paddle tennis platforms must abide by the specific rules and regulations established by the Parks and Recreation Commission for the use of such courts and platforms.

1. Courts are available to residents and their guests under the following categories:
   a. Group lessons
   b. Advanced reservation
   c. First-come, first-serve
   d. Private instruction

2. Court access for the above categories may be obtained in the following manner:
   a. Group lessons – Parks and Recreation or its agent is the sole organization permitted to operate group lessons on the courts. Registration for lessons takes place through the Parks and Recreation Department.
   b. Advanced reservation – court reservations are made through the Parks and Recreation Department during applicable season of play for a fee determined by the Parks and Recreation Commission.
   c. Daily play – (first come, first serve) – Courts are available to the general public except during scheduled group lesson or advanced reservations bookings. Fees for use may apply as determined by the Parks and Recreation Commission.
   d. Private instruction – Courts may be used by residents for private instruction subject to prior instructor permission. Permission will be granted by the Parks and Recreation Department. Advanced reservation may be required for private lesson instruction. Court reservations can be obtained through the Parks and Recreation Department.

PRIVATE INSTRUCTION CANNOT TAKE PLACE DURING GROUP LESSON TIMES.

The Town of Darien, its employees and Commission members, shall be held harmless from any liability for bodily injury and property damage arising out of private lesson instruction.

3. Courts may be utilized only for the purpose for which they were intended/designated or for which purpose the Parks and Recreation Commission may time to time designate as appropriate.

4. Residents and their guests shall provide and utilize proper equipment as appropriate for the court and season of play.

5. All cars must have a current beach sticker to park in the beach area. Paddle guests must be accompanied by a Darien resident.

6. Residents and their guests are expected to abide by all Darien Rules and Regulations at all times and to respect other players, employees, and facilities. Failure to do so may result in forfeiture of court time and fees and any future facility reservations.

ADDENDUM #4

DARIEN PARKS AND RECREATION
ATHLETIC FIELD SCHEDULING

The following requirements and priority system will apply in permitting athletic facilities:

a. All requests are subject to field availability, current conditions, maintenance functions and weather.

b. Request must be made in writing on the "Darien Parks and Recreation Facility Permit" form.

c. Facility permit requests must be completed and submitted for approval a minimum of two weeks prior to activity.

d. Groups requesting facilities for use "over a given period of time on a periodic basis" are required to include a certificate of liability insurance naming the Town of Darien as additional insured. Permits will not be approved without this certificate.

e. Requests are considered on a seasonal basis – spring, summer and fall. To us a facility beyond one season requires an additional permit application. No permits will be issued for winter use of the Parks and Recreation outdoor athletic fields.

f. Requests are subject to use fees and charges as set by the Parks and Recreation Commission and are payable in advance of permit approval.

g. Athletic fields are subject to prevailing weather conditions. Groups are expected to use common sense when deciding whether or not to begin or continue play on a field in

the event of inclement weather. Safety of the participants is paramount. Play should be cancelled or terminated if any persons and/or property could be damaged as a result of play. Groups who play on fields in unfavorable conditions do so at their own risk and are subject to having their permits revoked and future permits denied.

h. Athletic field assignments will be determined using the following priorities and criteria:

1. Park and Recreation sponsored activities
2. Board of Education, high school athletic teams
3. Presently permitted youth non-profit activities
4. Presently permitted adult non-profit activities
5. Presently permitted tournament play – non-profit (one team must be from Darien)
6. New nonprofit activities and leagues (non-existing as of spring 2002)

(**i.**) Traditional season (i.e. spring baseball, softball, lacrosse; fall soccer, football, field hockey)
(**ii**.) Suitability of activity for facility requested (size of field, amenities on site such as goals)
(**iii.**) Size of group (larger groups, greater percentage of available field time)
(**iv**.) Blanket permits for use of fields will NOT be issued. Groups must use time requested and approved. Failure to use the time approved can result in revocation of permit and loss of future approvals.

ADDENDUM #5

WEED BEACH WARMING HUT RENTAL POLICY

March 15, 2012

The primary purpose of the Warming Hut at Weed Beach is to service the paddle court operations during the winter months and any Parks and Recreation programs and activities. Following these priorities, the building may be rented by the following groups:

I. Types of groups in order of priority:

- Resident Paddle Tennis players/users
- Parks and Recreation programs and activities
- Youth Commission Summer Camp
- Darien civic/non-profit groups
- Darien general public

II. Two seasons of rental permitted

a. Winter Rentals (Oct – March) Rental for paddle parties only
b. Summer Rentals (April – Sept)

III. Hours of rental

a. ONE RENTAL OF THE FACILITY WILL BE PERMITTED PER DAY UNLESS APPROVED BY DIRECTOR.
b. **WINTER:** PADDLE PLAYERS ONLY. Mon-Fri 4-10pm: Sat 8am – 10pm; Sun 8am-6pm. Courts currently close at 8 PM on Saturdays, 6 PM on Sundays. These hours will remain the same but residents that rent the facility can reserve the courts and facility for a PADDLE party on either Friday or Saturday nights between the hours of 6 – 10 PM. An attendant must be on duty during paddle party hours.
c. **SUMMER:** Mon – Fri 4pm-9pm; Sat 10 am – 9pm; Sun 12pm – 9pm. An attendant must be on duty to open and close. Groups must provide their own supervision and general clean up.

IV. Rentals will be approved based on the policies and practices of the Parks and Recreation Department. (Darien residents cannot book a rental for a non-Darien agency).
    1. The facility will be rented to ***PADDLE PARTIES ONLY*** between October and March. Those renting must also book courts
    2. Facility Rental Permits are available to those 18 years of age or older
    3. **Reservations.** Facility Rental Permits are available by advanced reservation only.
        a. *A minimum of two weeks in advance for approval is required.*
        b. Set up and clean up time must be included in requests
    4. **Fees.** Facility rental fees will apply. (Fees will include utility charges, cleaning, attendant, and security deposits). Rate schedule is set by the Parks and Recreation Commission. PAYMENT IS REQUIRED IN ADVANCE AT THE TIME OF RESERVATION. CANCELLATIONS FEES WILL APPLY.
    5. **Insurance.** Renters must submit a certificate of insurance naming the Town as co-insured according to the requirements of the Town. Minimum limits of coverage will apply. Failure to submit will result in cancellation of rental.
        a. a certificate of public liability coverage for personal injury and for property damage is in force during the time for which the application is made. Liability insurance which names the Town of Darien as an additional insured is required for groups using the park facilities over a given period of time on a periodic basis, or for such events the Director deems necessary.
    6. Cancellations, date, or time changes of activity/event must be received Monday – Friday (excluding holidays) and at a minimum of **TWO WEEKS** in advance of the event. Failure to do so will result in the application of the full fee for rental.
    7. **Inclement weather policy**: In the case of *forecasted* inclement weather, the department may make a decision Monday – Friday to close facilities including weekend rentals. The department will then contact the permit holder for Saturdays and Sundays to inform of facility status.

8. **Alcohol.** Current regulations provides for the consumption of alcoholic beverages in designated areas, no glass bottles, and no alcohol without proper permit.
9. Winter Paddle Party – extended play hours:

    - All 5 courts can be reserved for a paddle tennis party.
    - Party reservations will be handled through the Parks & Recreation office and must be a minimum of 2 weeks in advance.
    - If all 5 courts are not reserved, other residents may reserve courts. These players will be allowed bathroom access through the front of the building.
    - All court fees for party reservation must be paid a minimum of 2 weeks in advance.
    - No open flames or grilling permitted in or around building

10. **Smoking.** No smoking allowed inside the building or on deck and around paddle courts.
11. **Building. General clean up and break down is the responsibility of the person listed in permit. Everything must be completed by 10pm. All refuse must be deposited in appropriate receptacles. Groups must bag and remove refuse to dumpster in parking lot. The facility will be cleaned daily by a cleaning service.** This will include restrooms, washing of floors, general maintenance cleaning.
12. **Furniture.** The dept. may or may not have furniture for use inside the building. Groups must rent/provide their own if facilities insufficient. Any furniture and equipment owned by Town MUST NOT BE REMOVED FROM BUILDING.
13. **Building Structure.** No tape of any kind may be used on the walls or painted surfaces of the building. Use of nails or screws is not permitted.

Use of the Firepit.

- The fire pit will be activated at the discretion of the Attendant.
- Factors affecting this will include but not be limited to:
    - Weather conditions
    - Number of individuals on site

Fee Schedule: Set Annually by the Park and Recreation Commission

Tighe&Bond

APPENDIX G

ARTICLE VIII - ENVIRONMENTAL AND RELATED REGULATIONS

SECTION 810. COASTAL AREA MANAGEMENT

811. Background and Purposes

The purpose of this Section is to achieve the goals, objectives and policies of the State-wide Coastal Area Management Program as set forth in Chapter 444 Section 22a-90 through 22a-112 of the General Statutes and known as "The Coastal Management Act", together with any amendments thereto.

812. Coastal Boundary

The area subject to these regulations shall include all portions of the Town within the Coastal Boundary, as defined by and mapped in accordance with "The Coastal Management Act" as amended and shown on the Coastal Area Management Map on file in the offices of the Commission and the Town Clerk.

813. Review Procedure

All buildings, uses and structures fully or partially within the Coastal Boundary shall be subject to the Coastal Site Plan Review requirements and procedures set forth in "The Coastal Management Act" and also with requirements of the Darien Zoning Regulations, with the exception of gardening, grazing and the harvesting of crops. The following activities beyond 100 feet of the mean high tide line shall be exempted from the coastal site plan review requirements of "The Coastal Management Act" in all such instances where no potential adverse impacts can be determined.

813.1 Exempt Activities

a. Additions to, or modifications of, existing buildings or detached accessory buildings, such as garages and utility sheds.

b. Construction of new, or modification of existing on-premise fences, walls, pedestrian walks and terraces, underground utility connections, water and sewer service lines, landscaping or signs and such other minor structures as shall not substantially alter the natural character of coastal resources.

c. Construction of an individual conforming single-family residential structure, except in or within 100 feet of the mean high tide line, or any of the following coastal resource areas as defined by "The Coastal Management Act": tidal wetlands, coastal bluffs and escarpments, beaches and dunes.

d. Activities conducted for the specific purpose of conserving or preserving soil, vegetation, water, fish, shellfish, wildlife and other coastal land and water resources.

813.2 Administrative Review

All required permit requests for any of the exempted activities listed above shall be subject to an administrative review conducted by the Planning and Zoning Director and the ZEO as part of the application process for a Zoning Permit or Building Permit.

813.3 Non-exempt Activities

Except for those activities itemized under Section 813.1, all applications for approval under any of the municipal regulatory authorities enumerated in "The Coastal Management Act" shall incorporate all information normally contained in such applications in addition to the information required under the Act and these shall be known as applications for Coastal Site Plan Review. A combined application may be submitted in accordance with the specifications set forth on appropriate checklists available from the offices of the Commission and the Building Department.

In general, applications for Coastal Site Plan Review approval shall be submitted to the office of the Commission. The Commission, or ZBA, when exercising its authorities shall prepare findings that include written documentation of the reasons for its decision regarding the proposal in accordance with "The Coastal Management Act" and shall submit such documentation to the ZEO or Building Official, as appropriate for Certification of Project as per "The Coastal Management Act". All such Coastal Site Plan Reviews shall be conducted in addition to any reviews and actions required by these Regulations or other applicable local ordinances.

813.4 Filing Fee

Each application for a Coastal Site Plan Review shall include a payment of a filing fee. (See Appendix B.)

813.5 Procedure

The Commission shall reserve the right to schedule and hold a Public Hearing on any Coastal Site Plan Review.

Application deadlines, hearing schedules and decision periods shall correspond with the established procedures for the specific type of planning or zoning application, as set forth in the General Statutes or locally adopted schedules.

814. Performance Bond

As a condition to a Coastal Site Plan approval, the Commission or ZBA may require a bond, escrow account or other surety or financial security arrangement to secure compliance with any modifications, conditions and other terms stated in its approval of a Coastal Site Plan.

815. Expiration of Approval

The Commission may provide for the expiration date of any approval given under this Section on a case-by-case basis. Any expiration date established by the Commission shall be expressly set forth in its decision and may be conditioned upon the completion of certain work or fulfillment of certain conditions set out in the decision. Extensions of this period may be granted by the Commission, as applicable, on written application to it, adequately setting forth the justification for such extension.

SECTION 820. FLOOD DAMAGE PREVENTION

821. Background and Purposes

These regulations have been prepared by the Town pursuant to Title 44, Chapter 1, Sections 59-75 of the Federal Register and the National Flood Insurance Program as amended.

It is the finding of the Commission and the Environmental Protection Commission that the flood hazard areas are subject to periodic inundation which may result or might possibly result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of tax base, all of which adversely affect the public health, safety and general welfare.

These flood losses are caused by the cumulative effect of obstructions in flood plains causing increases in flood heights and velocities, and by the occupancy in flood hazard areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, floodproofed or otherwise protected from flood damages.

It is, therefore, the purpose of these regulations to protect the citizens of Darien by making provisions for the preservation, protection, maintenance, or use of flood hazard and floodway areas.

Pursuant to the authority granted, the Commission shall grant, grant with modifications, or deny permits for all regulated activities associated with these regulations within the Town.

822. Inventory of Regulated Areas

a. Regulated areas are identified as special flood hazard areas by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study (FIS) for Fairfield County, Connecticut, dated July 8, 2013, with accompanying Flood Insurance Rate Maps (FIRM), dated July 8, 2013 (Panels 09001C0517G, 09001C0528G, 09001C0529G, 09001C0536G, 09001C0537G) and June 18, 2010 (Panels 09001C0507F, 09001C0509F, 09001C0526F, 09001C0527F), and other supporting data applicable to the Town of Darien, and any subsequent revisions thereto, are adopted by reference and declared to be a part of this regulation. Since mapping is legally adopted by reference into this regulation it must take precedence when more restrictive until such time as a map amendment or map revision is obtained from FEMA. The area of special flood hazard includes any area shown on the FIRM as Zones A, AE, and VE, including areas designated as a floodway on a FIRM. Zone VE is also identified as a Coastal High Hazard Area. The determination of flood hazard areas shall be based on the flood elevations shown on the FIRM maps in conjunction with an up-to-date and accurate topographical survey of the property. Areas of special flood hazard are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the Flood Insurance Study (FIS) for a community. BFEs provided on a Flood Insurance Rate Map (FIRM) are only

approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location.

b. The Commission and/or its designated agent shall monitor and maintain general surveillance of the regulated areas within the Town to ensure that no unauthorized regulated activities occur.

c. The Commission shall periodically, in conjunction with the Environmental Protection Commission and state or federal agencies, inventory flood-prone and flood-regulated erosion-prone areas and update the official map delineating said areas to be regulated.

823. Warning and Disclaimer of Liability

The degree of flood protection required by these Regulations is considered reasonable for regulatory purposes and is based on legal, scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flooding heights may be increased by man-made or natural causes. It is not implied that land outside the areas of special flood hazards, or uses within such areas, shall be free from flooding or flood damage. These Regulations shall not create liability on the part of the Town or by any official or employee thereof for any flood damage that results from reliance on these Regulations or any administrative decision lawfully made thereunder.

824. Permitted Operations and Uses

a. The following operations and uses shall be permitted in flood-prone and flood-related erosion-prone areas, as of right:

Uses incidental to the enjoyment and maintenance of a residential property such as landscaping without substantial alteration of the real estate, but not including any form of structure.

b. The following operations and uses shall be permitted as non-regulated uses in flood-prone and flood-related erosion-prone areas, provided they shall not disturb the natural and indigenous character of the land:

(1) Conservation of soil and vegetation;

(2) Outdoor recreation such as play and sporting areas, picnicking, field trails, nature study and horseback riding where otherwise legally permitted and regulated.

825. Permitting of Regulated Activities Within Regulated Areas

a. No person shall henceforth conduct a regulated activity in a regulated area of the Town without first obtaining a permit for such activity from the Commission. Any regulated activity or use legally existing as of the effective date of these regulations

shall be exempt therefrom and permitted to continue provided that no new or additional regulated activity, requiring a permit under these Regulations, shall be conducted after this same effective date without such a permit. Lands to which these Regulations apply are designated by the Federal Emergency Management Agency (FEMA).

b. Any application to the Commission for a Zoning Permit, Site Plan Approval, Coastal Site Plan Review or subdivision approval shall be reviewed by the Planning and Zoning Director to determine if it involves any activity or work within a regulated area, and if so, shall incorporate the requirements of these Regulations in the application.

c. Any application to the Building Department for a Building Permit or other permit shall be reviewed by the Building Official to determine if it involves any activity or work within a regulated area, and if so, the applicant shall be referred to the Commission for its approval prior to issuing said permit. All such action shall be properly recorded within the application file.

d. In all areas of special flood hazard and Coastal High Hazard areas (for all unnumbered and numbered A and V zones and A, AE, and/or VE zones), the following provisions shall apply:

(1) Permits shall be required for all new construction, substantial improvements (including the placement of prefabricated buildings and manufactured homes) and other development and shall be designed (or modified) and adequately anchored to prevent floatation, collapse or lateral movement of the structure and be constructed with materials and utility equipment resistant to flood damage and shall be constructed by methods and practices that minimize flood damage. Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. Such design shall be by a Connecticut Registered Professional Engineer and approved by the Building Official;

(2) Subdivision proposals shall be reviewed to assure that all such proposals shall be consistent with the need to minimize flood damage; all public utilities and facilities, such as sewer, gas, electrical and water systems shall be located and constructed to minimize and eliminate flood damage; and adequate drainage shall be provided to reduce exposure to flood hazards. Flood elevation data shall be included with all subdivision proposals. Where flood elevation data is not available, the applicant shall provide a hydrologic and hydraulic engineering analysis performed by a licensed professional engineer that generates base flood elevations for all subdivision proposals and other proposed development, including manufactured home parks and subdivisions;

(3) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems;

(4) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems;

(5) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;

(6) All new construction and substantial improvements of residential structures shall have the lowest floor (including basement) elevated to at least one foot above the base flood level. If the structure is substantially improved as defined by Section 210 (Substantial Improvement), then the entire structure must be made to conform with all requirements of Section 820;

(7) All new construction and substantial improvements of non-residential structures shall have the lowest floor (including basement) elevated to at least one foot above the base flood level or, together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure shall be watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(8) Where floodproofing shall be utilized for a particular structure in accordance with Subsection 825, a Connecticut Registered Professional Engineer or Architect shall certify that the flood proofing methods shall be adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood, and a record of such certificate indicating the specific elevation (in relation to mean sea level) to which structures are floodproofed shall be maintained with the Commission.

(9) For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are useable solely for parking of vehicles, building access, or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood waters.

(10) Designs for meeting the requirement in (9) above must either be certified by a registered Professional Engineer or Architect and must meet or exceed the following minimum criteria. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of flood waters.

(11) Base flood elevation data shall be provided for subdivision proposals and other proposed developments.

(12) Recreational vehicles (as defined in this section) placed on sites shall either (1) be on-site for fewer than 180 consecutive days, (2) be fully licensed and ready for highway use, (A recreational vehicle is ready for highway use

if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.), or meet all the general standards of 825 (d) and the elevation and anchoring requirements of 825 d. (13), (14) and (15) and 825 (f), the elevation and anchoring requirements. Storage of recreational vehicles must also comply with Section 403k of these Regulations.

(13) In areas of special flood hazard (A and AE Zones), any manufactured home to be newly placed, undergoing a substantial improvement or repaired as a result of substantial damage, shall be elevated so that the bottom of the lowest floor is at least one foot above the base flood elevation (BFE). The manufactured home must also meet all the construction standards for Zones A and AE as per Section 825. This includes manufactured homes located outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or on a site in an existing manufactured home park in which a manufactured home has incurred substantial damage as a result of a flood.

(14) In all coastal high hazard areas (VE Zone), any manufactured home to be newly placed, undergoing a substantial improvement or repaired as a result of sustained substantial damage, shall be elevated so that the bottom of the lowest horizontal structural member is at least one foot above the base flood elevation. The manufactured home must also meet all the construction standards for the VE Zone as per Section 825. This includes manufactured homes located outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or on a site in an existing manufactured home park in which a manufactured home has incurred substantial damage as a result of a flood.

(15) All manufactured homes within areas of special flood hazard and coastal high hazard areas shall be placed on a permanent foundation which itself is securely anchored and to which the structure is securely anchored so that it will resist flotation, lateral movement and hydrostatic pressures. Anchoring may include, but not be limited to, the use of over-the-top or frame ties to ground anchors. All manufactured homes shall be installed using methods and practices that minimize flood damage. Adequate access and drainage should be provided. Elevation construction standards include piling foundations placed no more than ten (10) feet apart, and reinforcement is provided for piers more than six (6) feet above ground level.

e. Within the regulatory floodway, delineated on the Flood Insurance Rate Map, encroachments, including fill, new construction, substantial improvements, repairs

to substantially damaged structures and other developments that would result in any (0.00 feet) increase in flood levels during the occurrence of the base flood discharge, shall be prohibited. The provision of proof that there shall be no (0.00 feet) increase in flood levels during occurrence of the base flood discharge due to the proposed construction or encroachment shall be the responsibility of the applicant and shall be based on hydrologic and hydraulic studies, performed in accordance with standard engineering practice, and certification, with supporting technical data, by a Connecticut Registered Professional Engineer.

f. In the coastal high hazard zones, VE Zone, the following provisions shall additionally apply:

(1) All new construction shall be located landward of the reach of the Connecticut Coastal Jurisdiction Line as defined in CGS 22a-359 as amended by Public Act 12-101;

(2) All new construction and substantial improvements shall be elevated on adequately anchored pilings or columns, and securely anchored to such piles or columns so that the lowest portion of the structural members of the lowest floor (excluding the pilings or columns) shall be elevated to at least one foot above the base flood level;

(3) A Connecticut Registered Professional Engineer or Architect shall certify that (1) the bottom of the lowest horizontal structural member of the lowest floor (excluding piling and columns) is elevated at least one foot above the base flood elevation; and (2) the pile or column foundation and structure attached thereto is anchored and resistant to floatation, collapse and lateral movement due to the affects of wind and water loads acting simultaneously on any building components;

(4) All new construction and substantial improvements shall have the space below the lowest floor free of obstructions or be constructed with breakaway walls intended to collapse under stress without jeopardizing the structural support of the structure; such temporarily enclosed space shall not be used for human habitation. Such temporarily enclosed space shall be used solely for building access, parking of vehicles, and/or storage.

(5) No use of fill for structural support of buildings shall be permitted.

(6) Non-supporting breakaway walls, lattice work or mesh screening shall be allowed below the base flood elevation provided it is not part of the structural support of the structure and is designed so as to break away under abnormally high tides or wave action, without damage to the structural integrity of the structure on which it is to be used and provided the following design specifications are met: (1) Design safe loading resistance of each wall shall not be less than ten (10) pounds per square foot or more than twenty (20) pounds per square foot; or (2) If more than twenty (20)

pounds per square foot, a licensed professional engineer or architect shall certify that the design wall collapse would result from a water load less than that which would occur during the base flood event, and the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components prior to or during the collapse of such wall. Such enclosed space shall be used solely for building access, parking of vehicles, and/or storage.

(7) There shall be no alteration of sand dunes that would increase potential flood damage.

g. In all areas of special flood hazard and coastal high hazard areas as applicable, the following shall additionally apply:

(1) The Commission shall obtain, review and reasonably use any base flood elevation and floodway data available from Federal, State or other sources including the information provided by Federal Insurance Administrator, as criteria for requiring that the requirements of these regulations, including but not limited to, Subsections 825.d(6), 825.d(7), 825.f(2) and 825.f(4), 825.g(2), and 825.g(3) shall be met.

(2) Where base flood elevations have been determined, and whether or not a floodway is designated, no new construction, substantial improvement, or other development (including fill) shall be permitted which will increase base flood elevations. The Commission may authorize regulated activities provided there is a certification from a registered professional engineer that the proposed development, considered cumulatively with all anticipated development and likely activities along the watercourse, shall not increase base flood elevations more than one foot.

(3) Should data be requested or provided, a regulatory floodway shall be adopted based on the principal that the floodway must be able to convey the waters of the base flood without increasing the water surface elevation more than one (1) foot at any point along the watercourse. The provisions of Subsection 825.g(2) shall apply to newly adopted floodways.

(4) The applicant shall either obtain a written report indicating recommendations, preliminary approvals, final approvals or disapprovals from any State or Federal Department or Agency such as Connecticut Department of Environmental Protection, U.S. Army Corps of Engineers, Connecticut Department of Transportation, etc., having jurisdiction over the application or any aspect thereof; or otherwise provide sufficient written evidence that such State or Federal agency approval appears to have a reasonable probability of success. In the event that any State or

Federal agency has a policy that precludes the provision of such decision until after the Planning & Zoning Commission has rendered its decision, the Planning & Zoning Commission may waive this requirement. If the Commission determines that a State or Federal agency's approval has a material impact on the approved application, further review by the Commission may be required. Copies of any permits or approvals must be provided and maintained on file with the development permit.

h. Alteration of watercourses: For an application to alter a watercourse the Commission shall consider the character and degree of injury to, or interference with, safety, health or the reasonable use of property which would be caused or threatened. This includes recognition of potential damage from erosion, turbidity or siltation; loss of fish and other beneficial aquatic organisms, wildlife and vegetation; the dangers of flooding and pollution; and destruction of the economic, aesthetic, recreational and other public or private uses, and values of wetlands and watercourses. Notification of any activity falling under this Section shall be sent to the State DEP and to adjoining towns, if applicable. Evidence of notification shall be sent to the FEMA. In all such cases, if a watercourse has been altered or a portion of the watercourse has been altered or a portion of the watercourse has been relocated, the flood-carrying capacity of the watercourse will be maintained and it will not be diminished. In addition, all requirements of the Town Environmental Protection Commission shall be met in full.

i. Aboveground Storage Tanks - Above-ground storage tanks (oil, propane, etc.) which are located outside or inside of the structure must either be elevated above the base flood elevation (BFE) on a concrete pad, or be securely anchored with tie-down straps to prevent flotation or lateral movement, have the top of the fill pipe extended above the BFE, and have a screw fill cap that does not allow for the infiltration of flood water.

j. Portion of Structure in Flood Zone - If <u>any</u> portion of a structure lies within the Special Flood Hazard Area (SFHA), the entire structure is considered to be in the SFHA. The entire structure must meet the construction requirements of the flood zone. The structure includes any attached additions, garages, decks, sunrooms, or any other structure attached to the main structure. Decks or porches that extend into a more restrictive flood zone will require the entire structure to meet the standards of the more restrictive zone.

k. Structures in Two Flood Zones - If a structure lies within two or more flood zones, the construction standards of the most restrictive zone apply to the entire structure (i.e., V zone is more restrictive than A zone; structure must be built to the highest BFE). The structure includes any attached additions, garages, decks, sunrooms, or any other structure attached to the main structure. (Decks or porches that extend into a more restrictive zone will require the entire structure to meet the requirements of the more restrictive zone.)

l. No Structures Entirely or Partially Over Water - New construction, substantial improvements and repair to structures that have sustained substantial damage cannot

be constructed or located entirely or partially over water unless it is a functionally dependent use or facility.

826. Application Procedures

a. Prior to the submission of any application hereunder, the applicant should consult with the Commission staff for the purpose of seeking advice and guidance with respect to the proposed regulated activity and requirements of the applicant.

b. Any person intending to carry out a regulated activity shall submit an application to the Commission in accordance with its regular procedures.

No application shall be deemed complete and ready for consideration by the Commission unless it shall be in such form and contain such information as is outlined in Subsection 826.d below.

c. All information submitted in the application shall be considered factual, or in the case of anticipated activity, binding. A knowing failure on the part of the applicant, or any of his agents, to provide correct information or performance not specifically authorized in the permit shall be sufficient grounds for the revocation of any permit issued under these Regulations and/or for penalties to be imposed.

d. All applications shall include the following information in writing and shall be on a form provided by the Commission:

(1) The applicant's name, home and business addresses and telephone numbers;

(2) The owner's name (if applicant is not the owner of the property), home and business addresses and telephone numbers and written consent to the proposed activity set forth in the application;

(3) The elevation, in relation to mean sea level, of the lowest floor (including basement) of all structures as measured by a Licensed Surveyor or registered Professional Engineer. For structures located in the V Zones, the elevation of the bottom of the lowest structural member of the lowest floor (including piling and columns);

(4) The elevation in relation to mean sea level to which any structure has been floodproofed, and a certification by a registered Professional Engineer that the floodproofed structure meets the requirements of these Regulations;

(5) The geographical location of the property which shall be affected by the proposed activity, including a description of the land in sufficient detail to allow identification of the properties on the map;

(6) Purposes and descriptions of the proposed activity;

(7) A statement certifying that all necessary permits have been obtained from federal, state and local governmental agencies from which prior approval is required;

(8) A Site Plan for all proposals. Such map shall be prepared by a licensed surveyor, Professional Engineer, Architect or Landscape Architect and shall show the approval and seal of a registered Professional Engineer. The map shall be drawn in accordance with the Commission's regular procedures. Detailed information on this Site Plan shall include, but not be limited to:

(a) Property lines of the real property to be affected, the owners of record of that property and of adjoining properties and the structures existing on the affected property;

(b) Locations on or near the affected property of wetlands or watercourses, as delineated on the Town's official wetlands map;

(c) Existing and proposed drainage structures such as culverts, catch basins, drainage ditches and dams, including complete computations used in arriving at the drainage design;

(d) Locations of all existing and proposed waste treatment facilities;

(e) Areas where material shall be deposited, repositioned or removed;(f) Significant vegetation and/or landscape plans;

(g) Proposed grading of any earth movement anticipated, by vertical contours as required by the Commission;

(h) The elevation of the 100 year flood boundary, the location of the 100 year flood plain, and the floodway/floodway fringe, where applicable.

(9) In all areas of special flood hazard (A and AE Zones), the Commission will obtain, record and maintain the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new construction, substantial improvement or repair to a structure that has sustained substantial damage and the elevation (in relation to mean sea level) to which all new construction, substantial improvement or repair to a structure that has sustained substantial damage has been flood-proofed. In all coastal high hazard areas (VE zones), the Commission will obtain, record and maintain the elevation of the bottom of the lowest horizontal structural member for all new construction, substantial improvement or repair to a structure that has sustained substantial damage.

(Sec. 826d(9): Added 5/30/2010

827. Filing Fee

A filing fee shall be submitted for all applications which shall require a full review in accordance with these requirements. (See Appendix B.) No fee shall be required if the application shall be found to require only an administrative review per Subsection 828c.

828. Application Review

a. A copy of all application materials shall be referred to the Director of Public Works, Environmental Protection Commission and other departments by the Commission as appropriate for their review. All comments received shall be entered into the record of the application. Any deviation from their recommendations which shall be approved by the Commission as part of any application approval shall be set forth in writing and shall include the reasons for deviating from the recommendation. In no case shall an approval be given which does not conform with the minimum requirements of these Regulations.

b. Where interpretation shall be needed as to the exact location of the boundaries of the areas of special flood hazards, the Commission shall make the necessary interpretations based upon additional data submitted by a licensed Land Surveyor or registered Professional Engineer. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation.

c. Where a regulated activity shall be proposed, which the applicant can reasonably demonstrate shall be likely to have no adverse effect on levels of flooding or erosion, the applicant may submit a preliminary plan for review by the Commission. The Commission will review all proposed regulated activity to determine whether the proposed development and building sites will be reasonably safe from flooding. The preliminary plan shall be accurately drawn to scale from a certified survey of the property and shall show all existing features, including buildings, roads and natural features and sufficient data to adequately describe the proposed work and activities to be carried out. The Commission may require additional data and mapping to be submitted by the applicant where it judges the submission inadequate and may exercise its option as to the need to have a registered Professional Engineer review a minor development.

The proposal shall then be informally reviewed by the Planning and Zoning Director, the Director of Public Works and a representative of the EPC. Where they find from the preliminary submission that the scope of the proposed work or activity shall be in fact so limited or insignificant that it shall present no adverse impact on levels of flooding or erosion, they may issue an Administrative Permit for the activity or work. Prior to the issuance of an Administrative Permit, the applicant shall show upon the prescribed application form that adjoining property owners have been advised of the project and have concurred that the proposed activity shall have no adverse flooding or erosion impact.

Such Administrative Permit shall be signed by the Planning and Zoning Director.

Where, in the opinion of the Planning and Zoning Director, any reasonable doubt exists pertaining to the insignificance of any such work or activity under this Section, the applicant shall be notified that a full application shall be required for further review of the proposed activity.

d. Summary Ruling. If the Commission shall find that a proposed activity is a regulated activity in conformance with the requirements of these Regulations, it may allow the activity with or without conditions after initial review. In order to grant a permit at this stage, the Commission, after full review of all pertinent factors, shall issue an opinion presenting its reasons for granting the permit with or without conditions. Such decision shall be publicized in the usual manner.

e. A Public Hearing may be held at the discretion of the Commission. If such Public Hearing is to be scheduled, then:

(1) All applications shall be submitted, notice published, heard and decided upon in accordance with established schedules per General Statutes;

(2) No filing fee shall be refunded after a notice of hearing is published;

(3) All applications, maps and documents relating to this hearing shall be open for inspection in the office of the Commission.

829. Permit

a. The Commission shall issue a written opinion presenting reasons for its action at the time of granting a permit, granting a permit with conditions or limitations, granting an extension of time on an existing permit, or denying a permit.

b. The Commission may deny a permit with or without prejudice. If a permit shall be denied with prejudice, the application shall not be resubmitted for a period of one year following the date of denial. If a permit shall be denied without prejudice, the applicant may modify, amend or correct his proposal and resubmit it to the Commission.

c. If a permit shall be granted with conditions or limitations, and the applicant shall dispute such conditions or limitations, he may amend, modify or correct his proposal. Rejection of a modified, amended or corrected proposal shall be equivalent to the denial of an application for the purposes of Subsection 831.

d. Any applicant may withdraw his application at any time prior to the Commission's final action thereupon for good cause stated in writing. Any filing fee paid by the applicant pursuant to these Regulations shall not be refunded.

e. A certification from a registered Professional Architect or Professional Engineer that the construction and floodproofing has been completed in conformance with the permit and these Regulations shall be submitted to the Commission prior to the issuance of a Certificate of Occupancy.

The Commission, with the written consent of the applicant, may extend the time prescribed in these Regulations for action by the Commission, in accordance with applicable General Statutes.

f. No activity for which a permit or license has been issued pursuant to these Regulations shall be conducted upon the subject parcel prior to the effective date or after the expiration of the permit. Any permit issued by the Commission shall be subject to any expiration date the Commission may establish as part of its decision. This shall be determined on a case-by-case basis. Any expiration date established by the Commission shall be expressly set forth in its decision and may be conditioned upon the completion of certain work or fulfillment of certain conditions set out in the decision. Extensions of this period may be granted by the Commission, as applicable, on written application to it, adequately setting forth the justification for such extension.

g. The Commission shall consider the following in making its final decision on all permit applications:

(1) All evidence offered at any Public Hearing on the character and extent of the proposed activity, on the land involved, and on possible effects of the activity on the subject parcel and on surrounding areas;

(2) Any reports from other local, state or federal agencies;

(3) Additional requested information;

(a) The character and degree of injury to, or interference with, safety, health, or the reasonable use of property which would be caused or threatened. This includes recognition of the danger that materials may be swept onto other lands to the injury of others, of potential damage from erosion or siltation, loss of wildlife and vegetation, the dangers of flooding and pollution, and destruction of the economic, aesthetic, recreational and other public and private uses and values of flood and erosion-prone areas;

(b) The suitability of such action to the area for which it is proposed;

(c) Measures which could mitigate the impact of the proposed activity and may be imposed as conditions of the permit. Such measures include the availability of further technical improvements or safeguards added to the plan to avoid a reduction in the natural function of the flood and erosion prone area;

(d) The necessity to the facility of a waterfront location, where applicable;

(e) The safety of access to the property in times of flood for ordinary and emergency vehicles;

(f) Any previous inundation of subject parcel.

830. Performance Bond

A performance bond, acceptable in form to the Commission, covering all costs of approved flood damage prevention improvements and any special floodproofing or structural requirements may be required prior to the issuance of any final approval given under these Regulations. Said bond shall be returned upon receipt of "As-built" drawings with certification by a Registered Professional Engineer that all construction conforms with the approved permit and these Regulations.

831. Appeal and Variance Procedures

a. Variances from these Flood Damage Prevention Regulations shall be heard by the ZBA in accordance with the requirements of the General Statutes.

b. Variances may be issued for the construction, rehabilitation or restoration of structures listed on the National Register of Historic Places of the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this Section.

c. Any variance granted shall include notice to the applicant that the result of granting a variance from these Regulations may result in higher flood insurance rates.

d. Variances shall be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, only in conformance with the following procedures:

(1) A showing of good and sufficient cause;

(2) A determination that failure to grant the variance would result in exceptional hardship to the applicant;

(3) A determination that the granting of a variance shall not result in increased flood heights, additional threats to public safety, extraordinary public expense, creation of nuisances, fraud or victimization of the public, or conflict with existing local laws or ordinances; and

(4) A determination that the variance shall be the minimum necessary, considering the flood hazard, to afford relief.

e. The applicant shall be notified in writing over the signature of a community official that: (1) the issuance of a variance to construct a structure below the base

flood level shall result in increased premium rates for flood insurance up to amounts as high as $25.00 for $100.00 of insurance coverage; and (2) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required below.

f. The ZBA shall: (1) maintain a record of all variance actions, including justification for their issuance, e.g. - that due consideration has been given to the following concerns: (i) the danger that materials may be swept onto other lands to the injury of others; (ii) the danger of life and property due to flooding or erosion damage; (iii) the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner; (iv) the importance of the services provided by the proposed facility to the community; (v) the necessity to the facility of a waterfront location, where applicable; (vi) the availability of alternate locations, for the proposed use which are not subject to flooding or erosion damage; (vii) the compatibility of the proposed use with existing and anticipated development; (viii) the relationship of the proposed use to the comprehensive plan and flood plain management program of that area; (ix) the safety of access to the property in times of flood for ordinary and emergency vehicles; (x) the expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and (xi) the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges; and (2) report such variances issued in its annual report submitted to the administrator.

g. Variances shall not be issued within any designated floodway if any increase in flood level during the base flood discharge would result.

832. Other Permits and Licenses

Nothing in these Flood Damage Prevention Regulations shall supersede or take the place of any requirement for the applicant to obtain any assent, permit, license, authorization required by law or regulations of the United States, the State, or any political subdivision thereof. The obtaining of such assents, permits, licenses or authorizations shall be the sole responsibility of the applicant.

833. Conflict, Severance and Legal Construction

a. Where there shall be a conflict between the provisions of these Regulations and those of any other federal, state or local act, charter provisions, ordinance or regulations, the provisions which impose the greatest restriction on use shall govern.

b. The invalidity of any word, clause, sentence, section, part or provision of these Regulations shall not affect the validity of any other part which can be given effect without such invalid part or parts.

SECTION 840. PRESERVATION OF SIGNIFICANT NATURAL, SPECIAL AND/OR MAN-MADE FEATURES AND RELATED OPEN SPACE AREAS IN THE SUBDIVISION OR RESUBDIVISION OF LAND

841. Background and Purposes

Where the Commission shall determine that significant natural, man-made or special features exist on a site proposed for subdivision or resubdivision, the protection and preservation of which would promote the purposes of these Regulations, the specific area, width, depth, frontage, yard and coverage requirements established by Section 400 and the various Area and Bulk Requirements Schedules may be modified to achieve such protection or preservation. Such action may be taken provided that all plans, policies and other relevant regulations of the Town shall be adhered to and further that the terms of this Section are met in full. Applicable features shall include, but not be limited to, streams, water bodies, shorelines, wetlands, rock ledges, steep slopes, major trees, views, waterfalls, wildlife habitats, stone walls, historic sites, landmarks, or unusual natural features.

The intent of these Regulations shall be to provide reasonable flexibility in the division and subsequent development of land, when, in the judgment of the Commission, such flexibility shall insure the conservation or preservation of features or areas which contribute to or provide for the health, safety and general welfare of the Town and the particular neighborhood in which such features or areas shall be located.

The Commission may require modifications to subdivision or resubdivision plans when one or more of the following is to be accomplished:

a. To preserve and protect the natural and cultural environment of the Town by encouraging the permanent preservation of specific features and lands which, in turn, contribute to the stabilization and enhancement of residential amenities and values and the maintenance of the Town's predominantly residential character.

b. To conserve and protect areas having conservation value, particularly those areas and features having qualities of natural beauty, ecological significance, or historic interest.

c. To preserve and protect wetlands, marshes, streams, rivers and ponds as natural resources and to avoid flooding, erosion and water pollution.

d. To more fully protect the health and safety of the people by restricting the extent to which steep slopes, poor soils and similar areas shall be utilized for streets, drives, waste disposal systems and other problem development.

e. To allow dedication for, or access by, the general public to land areas or cultural facilities when it shall be determined by the Commission that such shall be necessary to the general welfare of the neighborhood or Town and shall be consistent with established plans and policies.

842. Standards and Criteria

a. Any subdivision or resubdivision plan modified under the terms of this Section shall in no way change the intensity of use as prescribed for the applicable zone and shall not adversely alter the visual character of the immediate neighborhood or otherwise, in the judgment of the Commission, have any detrimental effect on the surrounding area.

b. The concept of single-family detached dwelling units shall be maintained in all cases. No exceptions shall be permitted in the R-2, R-l, R-1/2 or R-1/3 zones which would reduce the minimum standards below those established for the R-1/5 residential zone. Within the R-1/5 zone, the specified requirements may be reduced by not more than 25 percent. A maximum building coverage of 20 percent shall apply to all building lots.

c. The features to be preserved and the precise extent of the area or areas within which such features are to be located shall be clearly and accurately delineated on the plan and their significance described in writing on the application or in attachments thereto.

d. The area or areas so restricted by notation on the plan shall be preserved in a natural or undisturbed condition in perpetuity or may be used for specific purposes that the Commission determines to be desirable and necessary for the welfare, values and livability of the general area.

e. A suitable instrument which sets forth the proposed easements and restrictive covenants shall be required to be incorporated within all deeds and conveyances of property within the subdivision; said easements and/or covenants shall establish, to the satisfaction of the Commission, adequate and proper arrangements governing the extent and conditions of use, ownership, tax liability with lien provision, and maintenance responsibility for all areas of open space and/or features to be preserved in accordance with the provisions of this Section.

f. The extent of variation from the specific requirements of the Schedule shall be shown or noted on the plan and reference made to this Section by notation thereon.

g. The Commission may impose additional requirements as conditions of approval for the modified subdivision plan including, but not limited to, the provision of buffer areas, site development limitations, landscaping, architectural controls, and similar stipulations. All such requirements shall be directed at fulfilling the purposes of this Section.

h. In the event of any conflict in requirements as they may apply to a particular site, the more restrictive requirements shall be deemed to apply.

843. Procedure

The Commission shall pursue the following procedure in reviewing and acting upon any subdivision or resubdivision application submitted under the terms of this Section:

a. Prior to developing any formal applications, a sketch plan shall first be submitted to the Commission's office for an informal determination by the Planning and Zoning Director that the proposal generally meets the intent and purposes of this Section.

b. Upon receiving a positive determination in writing from the Commission's office, a preliminary application shall be developed and submitted for the Commission's consideration. Required materials shall include a specified number of copies of:

(1) A sketch plan which establishes a realistic indication of the number and location of lots and buildable areas which would be allowed under the basic regulations of the Town;

(2) A preliminary plan setting forth the proposed subdivision concept and clearly establishing the criteria under which an exception is being requested. Such preliminary plan shall generally comply with requirements established under Article III of the Subdivision Regulations;

(3) Any other documentation, legal instruments, photographs, plans or other materials required to support the application.

c. Upon receipt of the required materials, copies of the application shall be referred to appropriate Town agencies for review and comment.

d. All reviews of preliminary plans shall be designed to aid the applicant in the preparation of an acceptable final plan and shall not be construed as the application required for approval herein nor shall any preliminary planning recommendations made by the Commission be binding on the Commission in its action on any formal application to be made under this Section.

e. Within 45 days of the receipt of the preliminary application, the Commission shall schedule an informal hearing on the proposal.

f. Subsequent to receiving any Commission approval of the preliminary application, the applicant shall prepare final plans and documents incorporating all requirements established by the Commission. Such final plans shall be developed in compliance with the requirements set forth in the Town's Subdivision Regulations, Section 1000 of the Zoning Regulations and any additional standards prescribed by the Commission.

g. The Commission shall schedule a Public Hearing on the application within 65 days of the receipt of all required materials. Such hearing shall be held under the terms of both the Special Permit provisions of the Zoning Regulations and those for a Subdivision Plan.

844. Approved Applications

a. The Commission shall set forth its specific findings in all decisions on applications under this Section. Such findings shall reflect the purposes set forth in this Section

and, in addition, shall comply with applicable purposes set forth in Article I of these Regulations, and the findings described under Section 1000.

b. Processing of approved plans shall comply with appropriate provisions of the Subdivision Regulations and Special Permit requirements.

c. No change or amendment shall be made in the layout, location or design of features as provided on the approved subdivision plan, legal instruments or other approved documents unless the changes or amendments are first approved by the Commission. Application for such amendments or changes shall be made in the same manner as for a new application.

d. Any approval granted pursuant to the provisions of this Section which shall not have been complied with in full within one year of the approval date shall become null and void. Such full compliance shall include the filing of any required legal instruments, incorporation of necessary deed covenants, posting of performance bonds, dedication of lands, and similar requirements but shall not necessarily include the completion of all required site improvements.

SECTION 850. LAND FILLING, EXCAVATION AND EARTH REMOVAL

851. Special Permit Required

No person shall regrade, fill or excavate any land, or remove earth from any premises, for any purpose, except as described below, without having first procured a Special Permit for such activity from the Commission in accordance with the provisions of Section 1000. Earth regrading, filling, excavation and removal exempt from the provisions of this Section shall be limited to necessary excavation, filling and grading incidental to: a roadway or parking facility approved by the Commission; installation of essential septic systems, water lines, sewer pipe, storm drainage systems including dry wells, gas, electric and telephone services, and similar necessary utility features as part of a project approved by the Commission or its staff; and to home landscaping projects carried out by or for the owner which require less than 20 cubic yards of excavation, fill or regrading for completion, or in the alternative consist entirely of finish grading or topsoiling not altering the existing land contour by more than six inches, provided however, that the exemptions described above shall not apply to areas regulated by Sections 810 and 820.

In addition, the construction or alteration of a building or structure on the same premises for which a Zoning Permit has been issued may be exempt if such activities do not involve any area(s) beyond 25 feet of the perimeter of the construction or 50 cubic yards of material. Sufficient information to establish this clearly must be submitted together with the application for a Zoning Permit.

Commission staff may review and approve any project which requires less than 50 cubic yards of excavation, fill or regrading; or a project which consists entirely of finish grading or topsoiling not altering the existing land contour by more than eight inches, if in its determination, it will have no impact on adjoining properties.

852. Application

Application for a Special Permit for land filling, excavation, regrading or earth removal shall satisfy all requirements of Section 1000. In addition, depending upon the precise nature of the Permit request, the Commission may require any or all of the following: A detailed map of the entire premises showing existing and proposed contour lines at two foot intervals, existing and proposed drainage, proposed exit and entrance roadways and stockpile areas, major trees, watercourses and wetlands, structures existing and proposed, proposed fencing, and all other relevant information. The Commission may also require that the seal of a registered Professional Engineer be included on any submitted map or maps based on a certified survey of the property.

853. General Requirements

No application shall be approved until the Commission shall be satisfied that proper provision shall be made to control:

a. Ground stability, including the prevention of soil erosion and earth slides.

b. Storm water runoff, including protection of watercourses, streams, ponds and wetlands.

c. Pollution, siltation and stream erosion.

d. Flying dust and erosion by wind.

e. Conservation of the fertility of existing topsoil.

f. Preservation of significant trees, vegetation and other natural resources.

g. Such other factors as may relate to the healthful, safe and harmonious development of the Town.

854. Limitations and Environmental Impact Statement

In addition to the findings required above, and by Section 1000, excavation, fill or grading shall not:

a. Extend within 50 feet of a wetland, watercourse, stream, pond, river or tidal waterfront, unless specifically authorized by the EPC.

b. Extend within 15 feet of the boundaries of the premises, unless it can be shown to have no negative impact on the adjacent properties, and is specifically authorized by the Planning and Zoning Commission.

c. Establish lateral support or other finished slopes in excess of one foot of vertical rise in elevation per each two feet of horizontal distance, except where firm bedrock is permitted to be exposed.

d. Be finished with less than six inches depth of arable topsoil, well planted and stabilized, over the entire disturbed area (except for permitted water, rock, structure and paved areas).

e. Permit loose debris, such as rocks, stumps, brush, junk or other foreign material to remain exposed on the finished surface of the ground.

f. Result in excessive flying dust, noise, hazard to children or pedestrians, or danger to adjacent properties or passing vehicles.

g. Result in unreasonable disturbance to the safety, health and tranquility of the general neighborhood.

h. Inflict any substantial detriment on the natural environment or on the irreplaceable natural resources of its environs, as judged by the Commission.

i. Cause any negative effects on storm water drainage, especially as it may impact adjacent properties.

To secure the above conditions, the Commission, in granting a Special Permit, may attach reasonable limitations on hours of operation, extent of area disturbed at one time, locations of stockpiling and other activity, signs and lights, vehicular patterns and activity, and noise, and may require fencing, screening, covering of stored or transported materials and such other measures as shall be necessary to protect the rights of the general public and meet the purposes of these Regulations.

855. Preservation of Arable Topsoil

Arable topsoil from the disturbed area shall be preserved by carefully controlled stockpiling and re-used to the maximum extent possible in establishing the minimum layer of six inches of fertile topsoil required by these Regulations to be spread over the entire disturbed area on completion of the excavation operation.

856. Prohibited Operations

No land fill, excavation, regrading or earth removal operation permitted by these Regulations shall at any time result in, leave, or permit to exist, during construction or afterward, any sharp declivities, pits or depressions, any loose banks or water-filled holes or other major hazards.

No land fill shall make use of decomposable or other unstable material likely to cause future land subsidence, nor of material likely to cause pollution of soil or groundwater.

No land fill, excavation, regrading or earth removal operation shall engage in or permit to be operated on the site any processing, sorting, crushing, grading, mixing, fabrication, or similar activities.

857. Performance Bond Required

Before any Special Permit for land fill, excavation, regrading or earth removal granted hereunder shall become effective, the owner or applicant may be required to file a bond with the Commission. If required, that bond shall be in form and with surety acceptable to the Commission, sufficient to guarantee timely and proper completion of all required work and site restoration. The said bond shall provide for forfeiture to the Town of such sums as shall be necessary to complete the work at the expiration of the allotted construction period, and a 15 percent retention for a period of one year after the allotted construction period to guarantee the proper condition of the work. No permittee shall be released from his bonded obligation to the Town until an "as-built" topography map and plan of the site, comparable in detail and certification to that required by Subsection 853 and showing the completed project, shall be submitted to the Commission, and the Commission shall determine that the required work has been satisfactorily completed.

858. Expiration

Any permit granted hereunder shall expire and be null and void one year from the date of its approval, provided however that an extension or extensions of 12 months each, may be granted by the Commission if it shall find substantial justification for such extension in that such extension shall not be inimical to the welfare and tranquility of the adjacent neighborhood.

SECTION 870. SOIL EROSION AND SEDIMENT CONTROL

871. Background and Purposes

A Soil Erosion and Sediment Control Plan shall be submitted with any application for development when the disturbed area of such development is cumulatively more than one-half acre. In most cases the Soil Erosion and Sediment Control Plan shall be submitted as part of a more comprehensive Site Plan as required in Section 1020 or a subdivision plan.

872. Exemptions

A single-family dwelling that is not a part of a subdivision of land shall be exempt from these soil erosion and sediment control regulations.

873. Eligibility for Certification

To be eligible for certification, a Soil Erosion and Sediment Control Plan shall contain proper provisions to adequately control accelerated erosion and sedimentation and reduce the danger from storm water runoff on the proposed site based on the best available technology. Such principles, methods and practices necessary for certification shall be found in the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control" published by the Connecticut Department of Energy and Environmental Protection, as amended. Alternative principles, methods and practices may be used with prior approval of the Commission.

874. Plan Requirements

Said plan shall contain, but not be limited to:

874.1 Narrative

A narrative describing the development including:

a. The schedule for grading and construction activities including: start and completion dates; sequence of grading and construction activities; sequence for installation and/or application of soil erosion and sediment control measures; and sequence for final stabilization of the project site;

b. The design criteria for proposed soil erosion and sediment control measures and storm water management facilities;

c. The construction details for proposed soil erosion and sediment control measures and storm water management facilities;

d. The installation and/or application procedures for proposed soil erosion and sediment control measures and storm water management facilities;

e. The operations and maintenance program for proposed soil erosion and sediment control measures and storm water management facilities.

874.2 Plan Map

A plan map at a sufficient scale to show:

a. The location of the proposed development and adjacent properties;

b. The existing and proposed topography including soil types, wetlands, watercourses and water bodies;

c. The existing structures on the project site, if any;

d. The proposed area alterations including cleared, excavated, filled or graded areas and proposed structures, utilities, roads, and, if applicable, new property lines;

e. The location of and design details for all proposed soil erosion and sediment control measures and storm water management facilities;

f. The sequence of grading and construction activities;

g. The sequence for installation and/or application of soil erosion and sediment control measures;

h. The sequence for final stabilization of the development site.

874.3 Other Information

Any other information deemed necessary and appropriate by the applicant or requested by the Commission or its designated agent.

875. Minimum Acceptable Standards

a. Plans for soil erosion and sediment control shall be developed in accordance with these Regulations using the principles as outlined in Chapters 3 and 4 of the Connecticut Guidelines for Soil Erosion and Sediment Control (1985), as amended. Soil erosion and sediment control plans shall result in a development that: shall minimize erosion and sedimentation during construction; shall stabilize and be protected from erosion when completed; and shall not cause off-site erosion and/or sedimentation.

b. The minimum standards for individual measures shall be those in the Connecticut Guidelines for Soil Erosion and Sediment Control (1985), as amended. The Commission may grant exceptions when requested by the applicant if technically sound reasons shall be presented.

c. The appropriate method from Chapter 9 of the Connecticut Guidelines for Soil Erosion and Sediment Control (1985), as amended, shall be used in determining peak flow rates and volumes of runoff unless an alternative method shall be approved by the Commission.

876. Issuance or Denial of Certification

a. The Commission shall either certify that the Soil Erosion and Sediment Control Plan, as filed, complies with the requirements and objectives of this Section or deny certification when the development proposal does not comply with this Section.

b. Nothing in these Regulations shall be construed as extending the time limits for the approval of any application under Chapters 124, 124A or 126 of the General Statutes.

c. Prior to certification, any plan submitted to the Town may be reviewed by the County Soil and Water Conservation District which may make recommendations concerning such plan, provided such review shall be completed within thirty days of the receipt of such plan.

d. The Commission may forward a copy of the development proposal to the EPC or other review agency or consultant for review and comment.

877. Conditions of Approval

a. The estimated costs of measures required to control soil erosion and sedimentation, as specified in the certified plan, that are a condition of certification of any modified site plan may be required to be covered in a performance bond or other assurance acceptable to the Commission in accordance with the provisions specified under Subsection 1027.

b. Site development shall not begin unless the Soil Erosion and Sediment Control Plan shall be certified and those control measures and facilities in the plan scheduled for installation prior to site development shall be installed and functional.

c. Planned soil erosion and sediment control measures and facilities shall be installed as scheduled according to the certified plan.

d. All control measures and facilities shall be maintained in effective condition to ensure the compliance of the certified plan.

878. Inspection

Inspections shall be made by the Commission or its designated agent during development to ensure compliance with the certified plan and that control measures and facilities have been properly performed or installed and maintained. The Commission may require the permittee to verify through progress reports that soil erosion and sediment control measures and facilities have been performed or installed according to the certified plan and are being operated and maintained.

SECTION 880 – STORMWATER MANAGEMENT

Stormwater management is the practice of controlling the runoff of stormwater from a site such that the quantity of stormwater flow does not result in a cumulative adverse impact on properties proximate to the site, or cause adverse cumulative impact downstream as a result of the proposed development, while managing the stormwater runoff in a manner that mitigates impacts to water quality. These regulations are intended to improve stormwater management and give reasonable consideration to the restoration and protection of the ecosystem and habitat of Long Island Sound as provided in Connecticut General Statutes 8-2(b), 8-23(a), and 8-35a.

a. Conformance to Established Standards. Proposed stormwater management plans are to conform to the technical guidance and procedures in the Town of Darien Department of Public Works Stormwater Management and Drainage Manual, as may be amended and to the extent not inconsistent with these regulations.

b. Applicability. Proposals for any site meeting one or more of the following criteria shall submit a stormwater management plan conforming to Section 882:

1) Construction of 1,000 square feet or more of impervious surface; or

2) Demolition and reconstruction or replacement of an existing residential dwelling; or

3) Submission of any application subject to review and action by the Planning and Zoning Commission if the activity is within the jurisdiction of that Commission and/or by the Environmental Protection Commission (EPC) if the activity is within the jurisdiction of the EPC.

If the proposed activity does not require the approval of either the Planning and Zoning Commission or the Environmental Protection Commission, then any stormwater management plan shall be submitted to the Zoning Enforcement Officer (ZEO) with an application for a Zoning Permit or Certificate of Zoning Compliance. The ZEO has thirty days to act on the application.

c. Impervious Surfaces. Impervious surface, for the purpose of this section is defined as Building Coverage plus the area covered by driveways, sidewalks, walkways, parking areas, terraces, patios, outside storage areas, loading and unloading areas, and equipment pads.

d. Public Emergency. In order to help alleviate an emergency situation, the Public Works Director may waive the requirement for a drainage analysis in order to protect the health, safety, and welfare of the public, if a public emergency has been declared.

e. Exception for Coastal Areas. If a site is within the Town's Coastal Boundary, and does not require formal review or action by the Planning & Zoning Commission or Environmental Protection Commission, the requirement for a comprehensive Stormwater Management Plan is waived—the plan need only address water quality impacts and mitigation.

881. Basic Components of Stormwater Management Plans

Comparative hydrology shall document no increase in downstream flooding conditions for the 2, 10, 25, and 50 year storms on properties proximate to the site, or cause adverse cumulative impact downstream as a result of the proposed development.

a. Upstream and Downstream Drainage Analysis. Stormwater management plans shall take into account the upstream tributary drainage area and include a downstream impact analysis for proposals which are likely to result in increased runoff, or alter the flow of an existing discharge into a storm drainage system or watercourse. The downstream impact analysis shall include analysis of a confluence point downstream of the site where the area of the site is 10% or less of the area of the upstream watershed and includes an assessment of potential adverse impacts arising from the runoff.

b. Nonstructural Drainage Systems. Stormwater management plans shall include non-structural approaches to controlling runoff to the maximum extent practicable, promoting the infiltration of rainfall into the soil and preservation of existing drainage patterns.

c. Stormwater Runoff Quality. Stormwater management plans shall include measures to minimize, to the extent practicable, discharge of pollutants including suspended sediment from the site through the use of measures that control both the sources and minimize to the extent practicable, transport of pollutants, including suspended sediment.

d. Conveyance System. Conveyance systems for the proposed project must be analyzed, evaluated, designed, and constructed to accommodate existing upstream and off-site runoff onto a site in addition to the on-site runoff from the proposed development.

e. Outlet Locations. The runoff from proposed development sites should utilize existing outlets to the maximum extent practicable, unless it is demonstrated that using the existing outlet would exacerbate downstream flooding or result in adverse impacts to downstream properties or properties proximate to the site. The location of the new outlets is critical to avoid adverse impacts to property(ies) proximate to the site. Such point sources shall be located such that they do not adversely affect nearby property or structures that may be proximate to the site and discharge to natural or manmade drainage systems with adequate capacity to handle the anticipated flow.

f. Maintenance and Operation. Maintenance of drainage facilities and systems constructed or modified as part of a proposed development, is the responsibility of the property owner, unless otherwise dedicated to, or the acknowledged responsibility of, a government agency or other entity.

Stormwater management plans shall include an Operation and Maintenance ("O&M") plan which shall identify the specific drainage facilities or systems subject to the plan, inspection methods and frequencies, and maintenance methods and frequencies. The plan shall provide for routine maintenance such as minor cleaning usually once or twice a year and insure that the drainage facility or system is unimpeded and operational.

g. Licensed Professional Engineer. Stormwater management plans, reports, calculations, and O&M plans and schedules shall be prepared, signed, and sealed by a Professional Engineer licensed in the State of Connecticut.

h. Exceedance of Minimum Standards. Applicants are encouraged to exceed the minimum drainage standards set forth in these regulations to increase positive impacts in flood prone areas.

882. Documentation Requirements

Stormwater management plans and reports where required in these Regulations, as defined in Section 880 shall include the following documentation:

a. Separate topographic contour mapping showing the existing and proposed drainage areas at an appropriate scale.

b. Floodplain boundaries and Stream Channel Encroachment Lines as defined by the National Flood Insurance Program and the Connecticut Department of Environmental Protection, respectively.

c. Inventory and evaluation of on-site hydraulic structures and watercourses, within or related to areas of proposed impact, including brooks, channels, culverts, bridges, dams, weirs, and dikes, with information on their flow capacity and physical condition. The limiting capacity of existing structures may, at the option of the Director of Public Works, be used to establish the allowable post-development peak flow rate from the site.

d. Inventory and evaluation of existing and proposed on-site stormwater storage areas, including impoundments, riverine corridors, swamps, ponds, wetlands, floodplains, and miscellaneous depressions.

e. Identification of peak rate of runoff under pre-development and post-development conditions from the site at each design point including those included in the downstream impact analysis as applicable.

f. Specific documentation in support of stormwater management design shall include, but is not limited to the following:

(1) Method used to calculate Stormwater runoff.

(2) Runoff characteristics of the property before and after development.

(3) Watershed calculations used to develop NRCS Curve Number or Rational Method Calculations.

(4) Time of concentration calculations identifying length and slope of various components including overland, shallow concentrated and channel flow. Time of concentration paths shall be shown on the watershed maps.

(5) Hydrologic model input and output files for all storms evaluated.

(6) Subwatershed map delineating all contributing areas to each catch basin in a proposed storm sewer system.

(7) Hydraulic computations for all storm drainage systems. Computations shall show hydraulic grade line elevations and structure rim elevations.

(8) Pond and storage area stage-storage discharge calculations.

(9) Soils information, including depth to seasonally high groundwater and permeability testing and drawdown calculations for proposed infiltration systems.

g. A complete set of construction plans. Where storm drains are proposed in roadways, the plans shall include storm sewer specifications and profiles.

883. Hydrologic Evaluation

Various methods are available for hydrologic modeling, with some methods more appropriate than others. Most methods are based upon land cover and time of concentration relationships. Hydrologic models should use methods established by the Soil Conservation Service (now Natural Resources Conservation Service) or the United States Army Corps of Engineers. In all cases, the 2, 10, 25, and 50 year storms shall be evaluated for existing and proposed conditions comparative hydrology, with the same modeling methodology used for both conditions. The Director of Public Works may waive the requirements herein if the applicant demonstrates, in writing, why a proposed alternate method of analysis is appropriate and adequate.

a. Basis of Existing Conditions Analysis. Existing Conditions Analysis shall account for actual on-site conditions at the time of the proposal, accounting for all depressions, and types of land cover, except for applications involving the demolition of an existing residential dwelling or commercial building and replacement of the razed structure with a new structure.

Where an existing residential dwelling or commercial building is proposed to be razed and replaced with a new structure, the basis of existing conditions analysis shall be the site's undeveloped condition if there is no engineered detention system on the existing site. If there is an existing engineered detention system on

the existing site, then the actual existing conditions at the time of application shall be used as the basis of the existing conditions analysis. The local land use board or ZEO may require a comparison to undeveloped conditions where warranted.

b. Detention Analysis. A complete runoff hydrograph evaluation is required for projects utilizing detention methods.

884. Peak Flow Attenuation

a. The discharge of stormwater runoff from development sites shall not result in cumulative adverse impacts on properties proximate to the site and shall not exacerbate downstream flooding conditions.

b. In all cases, the applicant shall perform a watershed study to document that the proposed development will not cause adverse impacts on properties proximate to or downstream from the site. The limit of this study will be the downstream point at which the site represents 10% or less of the total watershed area. This study shall be done for the 2, 10, 25, and 50 year storms.

885. Infiltration and Stormwater Quality

Infiltration shall be utilized where appropriate to reduce stormwater runoff rate and volume, to improve stormwater quality, and to recharge groundwater. Runoff from areas with high pollutant loadings, such as gasoline stations shall not be infiltrated. All infiltration practices shall be subject to pretreatment with another stormwater best management practice. The Town of Darien Department of Public Works Stormwater Management and Drainage Manual, as may be amended, shall be used as a guide.

886. Stormwater Detention Facilities

Stormwater detention facilities to temporarily store excess runoff may be used to control peak flow rate and duration of downstream flows when coordinated with the runoff characteristics of the watershed in which they are located and the local site conditions.

887. Certification and Maintenance Agreements

a. Prior to obtaining a Zoning Permit and/or starting work on a project, an O&M plan or Notice of Drainage Maintenance Plan shall be recorded on the Darien Land Records. The O&M plan either filed in the Land Records or referred to by the Notice of Drainage Maintenance Plan shall stipulate the inspection frequency, maintenance requirements and intervals for all proposed stormwater management practices on the site.

b. Prior to issuance by the Zoning Enforcement Officer of a Certificate of Zoning Compliance, a Certificate of Occupancy, or use of the site, the following shall be submitted:

(1) An improvement location survey prepared and submitted by a Connecticut licensed land surveyor, depicting: pipe inverts, diameters and sizes, structure inverts and elevation, and other information to adequately describe the constructedstormwater management system. The survey shall also indicate the extent of impervious surfaces, and topography of the completed site where changes in grade exceed one foot.

(2) A certification by a professional engineer licensed in the State of Connecticut stating that the proposed drainage system was installed in conformance with the approved plans. If plans were not prepared by a professional engineer, a signed statement by the owner shall be submitted stating that the system was installed in substantial conformance with the approved design.

888. Waivers

a. The Planning and Zoning Commission and/or the Environmental Protection Commission may waive one or more of the provisions in Section 880 et. seq. under any of the following circumstances:
   (1) Based upon the size and/or location of the subject property;
   (2) Based upon any unique site characteristics of the subject property;
   (3) Due to the scope, nature, and/or amount of work proposed within the application;
   (4) Due to any prior applications for the subject property which have accounted for stormwater management, and those drainage structures or facilities are still in place.

   The burden is upon the applicant to demonstrate why a waiver should be granted.

Tighe&Bond

APPENDIX H

1

Catch Basin Report Form

CB Location (street name) PUTNAM HILL CB # 7

Operators: Blakeney, Bocchicchio, D'Arinzo III, Hogan, Malaterra, Mattera

Date of Inspection/Cleaning: 8/2/12 CB Head Style: Small or Standard.

Material: Loose Block, Cemented Block, Rubble, Precast Concrete, Other _____

Sump: None (dirt bottom), Concrete, Depth of Sump (estimated): 6", 1', 2', 3', 4'

Grate Condition: Poor, Fair, Good Material: Cast Iron, Steel, Galvanized

Results of Cleaning: CLEANED

(Note if roots, heavy sand, leaves, rocks, debris, or other. Note if pipes need cleaning and if cleaning of pipes were performed. Note any unusual odors if any. Note any unusual flows such as heavy flows during long periods of no precipitation or suds or discoloration in flows.)

Catch Basin Report Form

CB Location (street name) PUTNAM HILL CB # 1

Operators: Blakeney, Bocchicchio, D'Arinzo III, Hogan, Malaterra, Mattera

Date of Inspection/Cleaning: 8/2/12 CB Head Style: Small or Standard.

Material: Loose Block, Cemented Block, Rubble, Precast Concrete, Other _____

Sump: None (dirt bottom), Concrete, Depth of Sump (estimated): 6", 1', 2', 3', 4'

Grate Condition: Poor, Fair, Good Material: Cast Iron, Steel, Galvanized

Results of Cleaning: CLEANED

(Note if roots, heavy sand, leaves, rocks, debris, or other. Note if pipes need cleaning and if cleaning of pipes were performed. Note any unusual odors if any. Note any unusual flows such as heavy flows during long periods of no precipitation or suds or discoloration in flows.)

Tighe&Bond

APPENDIX I

FILE COPY
NPDES PHASE II

TOWN OF DARIEN
DEPARTMENT OF PUBLIC WORKS
2 RENSHAW ROAD - TOWN HALL
DARIEN, CT 06820-5397
TELEPHONE (203) 656-7346

EDWARD L. GENTILE JR., P.E.
DIRECTOR OF PUBLIC WORKS

DARREN OUSTAFINE, P.E.
ASSISTANT DIRECTOR OF PUBLIC WORKS

March 30, 2016

Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Attn: Mr. Christopher Stone
Permitting, Enforcement and Remediation Division
Water Management Bureau

Re: General Permit for Dischaerge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)

Dear Mr. Stone:

Attached are stormwater sample results (collected on March 14, 2016). We will continue to look for another storm to sample at once.

Please contact me directly at (203) 656-7365 should you need further information.

Thank you.

Sincerely,

Darren Oustafine, P.E.
Assistant Director of Public Works

P:\DEEP - MS4\transltr033016.doc

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Town of Darien

Mailing Address: 2 Rensahw Road - Town Hall

Contact Person: Darren Oustafine Title: Assistant Director, DPW

Phone: 203-656-7365 Permit Registration #GSM: 000046

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): 1 Noroton Culvert, N41,3.895', W73,29.308'

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Stony Brook

Time of Start of Discharge: Continuous

Date/Time Collected: March 14, 2016 Water Temperature: 10 C, appr 50 F

Person Collecting Sample: Darren Oustafine

Storm Magnitude (inches): >1" (app) Storm Duration (hours): > 6 hours

Date of Previous Storm Event: Greater than 72 hours with no snow melt

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM4500 H B	7.27 pH units	CET Laboratories
Rain pH	SM4500 H+B	6.28 SU	CET Laboratories
Hardness	EPA 200.7	170 MG/L	CET Laboratories
Conductivity	2510B	780 UMHOS/CM	CET Laboratories
Oil & Grease	EPA 1664A	ND MG/L	CET Laboratories
COD	SM 5220	46 MG/L	CET Laboratories
Turbidity	EPA 180.1	13 NTU	CET Laboratories
TSS	SM 2540 D	44 MG/L	CET Laboratories
TP	EPA 365.4	ND MG/L	CET Laboratories
Ammonia	EPA 350.1	0.24 MG/L	CET Laboratories
TKN	EPA 351.2	1.7 MG/L	CET Laboratories
NO_3+NO_2	EPA 300.0	3.4+ND<0.1 MG/L	CET Laboratories
E. coli	SM9223B	579.4 MPN/100mL	CET Laboratories

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Darren Oustafine
(Print Name)

Signature: _____ Date: 3/30/16

1

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Town of Darien

Mailing Address: 2 Rensahw Road - Town Hall

Contact Person: Darren Oustafine Title: Assistant Director, DPW

Phone: 203-656-7365 Permit Registration #GSM: 000046

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): 2, Old Kings Highway South, N41,4.473', W73,28.198'

Please check the appropriate area description: ☐ Industrial ☒ Commercial ☐ Residential

Receiving Water (name, basin): Goodwives River

Time of Start of Discharge: Continuous

Date/Time Collected: March 14, 2016 Water Temperature: 10 C,approx 50F

Person Collecting Sample: Darren Oustafine

Storm Magnitude (inches): >1" (app) Storm Duration (hours): > 6 hours

Date of Previous Storm Event: greater than 72 hours with no snow melt

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM4500 H B	6.75 pH units	CET Laboratories
Rain pH	SM4500 H+B	6.28 SU	CET Laboratories
Hardness	EPA 200.7	28 MG/L	CET Laboratories
Conductivity	2510B	340 UMHOS/CM	CET Laboratories
Oil & Grease	EPA 1664A	ND MG/L	CET Laboratories
COD	SM 5220	120 MG/L	CET Laboratories
Turbidity	EPA 180.1	36 NTU	CET Laboratories
TSS	SM 2540 D	47 MG/L	CET Laboratories
TP	EPA 365.4	0.18 MG/L	CET Laboratories
Ammonia	EPA 350.1	0.59 MG/L	CET Laboratories
TKN	EPA 351.2	2.2 MG/L	CET Laboratories
NO_3+NO_2	EPA 300.0	0.53+ND<0.1 MG/L	CET Laboratories
E. coli	SM9223B	344.8 MPN/100mL	CET Laboratories

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Darren Oustafine
(Print Name)

Signature: _____ Date: 3/30/16

2

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Town of Darien

Mailing Address: 2 Rensahw Road - Town Hall

Contact Person: Darren Oustafine Title: Assistant Director, DPW

Phone: 203-656-7365 Permit Registration #GSM: 000046

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): 3 145 Middlesex Rd, N41,4.596', W73,30.075'

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Noroton River

Time of Start of Discharge: Continuous

Date/Time Collected: March 14, 2016 Water Temperature: 10 C approx 50F

Person Collecting Sample: Darren Oustafine

Storm Magnitude (inches): >1" (app) Storm Duration (hours): > 6 hours

Date of Previous Storm Event: Greater than 72 hours with no snow melt

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM4500 H B	7.02 pH units	CET Laboratories
Rain pH	SM4500 H+B	6.28 SU	CET Laboratories
Hardness	EPA 200.7	73 MG/L	CET Laboratories
Conductivity	2510B	230 UMHOS/CM	CET Laboratories
Oil & Grease	EPA 1664A	ND MG/L	CET Laboratories
COD	SM 5220	30 MG/L	CET Laboratories
Turbidity	EPA 180.1	9.9 NTU	CET Laboratories
TSS	SM 2540 D	14 MG/L	CET Laboratories
TP	EPA 365.4	0.18 MG/L	CET Laboratories
Ammonia	EPA 350.1	0.40 MG/L	CET Laboratories
TKN	EPA 351.2	1.1 MG/L	CET Laboratories
NO_3+NO_2	EPA 300.0	1.9+ND<0.1 MG/L	CET Laboratories
E. coli	SM9223B	648.8 MPN/100mL	CET Laboratories

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Darren Oustafine
(Print Name)

Signature: _____ Date: 3/30/16

3

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Town of Darien

Mailing Address: 2 Rensahw Road - Town Hall

Contact Person: Darren Oustafine Title: Assistant Director, DPW

Phone: 203-656-7365 Permit Registration #GSM: 000046

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): 4 Middlesex Rd @ Leroy, N41,4.925', W73,29.133'

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Stony Brook River

Time of Start of Discharge: Continuous

Date/Time Collected: March 14, 2016 Water Temperature: 10 C approx 50F

Person Collecting Sample: Darren Oustafine

Storm Magnitude (inches): >1" (app) Storm Duration (hours): > 6 hours

Date of Previous Storm Event: Greater than 72 hours with no snow melt

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM4500 H B	7.05 pH units	CET Laboratories
Rain pH	SM4500 H+B	6.28 SU	CET Laboratories
Hardness	EPA 200.7	110 MG/L	CET Laboratories
Conductivity	2510B	380 UMHOS/CM	CET Laboratories
Oil & Grease	EPA 1664A	ND MG/L	CET Laboratories
COD	SM 5220	82 MG/L	CET Laboratories
Turbidity	EPA 180.1	2.2 NTU	CET Laboratories
TSS	SM 2540 D	ND MG/L	CET Laboratories
TP	EPA 365.4	ND MG/L	CET Laboratories
Ammonia	EPA 350.1	0.25 MG/L	CET Laboratories
TKN	EPA 351.2	ND MG/L	CET Laboratories
NO_3+NO_2	EPA 300.0	1.6+ND<0.1 MG/L	CET Laboratories
E. coli	SM9223B	66.3 MPN/100mL	CET Laboratories

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Darren Oustafine
(Print Name)

Signature: _____ Date: 3/30/16

4

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Town of Darien

Mailing Address: 2 Rensahw Road - Town Hall

Contact Person: Darren Oustafine Title: Assistant Director, DPW

Phone: 203-656-7365 Permit Registration #GSM: 000046

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): 5 Prospect Ave @ Goodwives River, N41,4.986', W73,27.992'

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Goodwives River

Time of Start of Discharge: Continuous

Date/Time Collected: March 14, 2016 Water Temperature: 10 C approx 50F

Person Collecting Sample: Darren Oustafine

Storm Magnitude (inches): >1" (app) Storm Duration (hours): > 6 hours

Date of Previous Storm Event: Greater than 72 hours with no snow melt

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM4500 H B	7.67 pH units	CET Laboratories
Rain pH	SM4500 H+B	6.28 SU	CET Laboratories
Hardness	EPA 200.7	110 MG/L	CET Laboratories
Conductivity	2510B	380 UMHOS/CM	CET Laboratories
Oil & Grease	EPA 1664A	ND MG/L	CET Laboratories
COD	SM 5220	12 MG/L	CET Laboratories
Turbidity	EPA 180.1	1.5 NTU	CET Laboratories
TSS	SM 2540 D	ND MG/L	CET Laboratories
TP	EPA 365.4	ND MG/L	CET Laboratories
Ammonia	EPA 350.1	0.14 MG/L	CET Laboratories
TKN	EPA 351.2	ND MG/L	CET Laboratories
NO_3+NO_2	EPA 300.0	1.5+ND<0.1 MG/L	CET Laboratories
E. coli	SM9223B	517.2 MPN/100mL	CET Laboratories

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Darren Oustafine
(Print Name)

Signature: _____ Date: 3/30/16

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Town of Darien

Mailing Address: 2 Rensahw Road - Town Hall

Contact Person: Darren Oustafine Title: Assistant Director, DPW

Phone: 203-656-7365 Permit Registration #GSM: 000046

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): 6 Pembroke Road @ Salisbury Road and Upper Goodwives River, N41,6.411', W73,28.700'

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Goodwives River

Time of Start of Discharge: Continuous

Date/Time Collected: March 14, 2016 Water Temperature: 10 C approx 50F

Person Collecting Sample: Darren Oustafine

Storm Magnitude (inches): >1" (app) Storm Duration (hours): > 6 hours

Date of Previous Storm Event: Greater than 72 hours with no snow melt

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM4500 H B	7.27pH units	CET Laboratories
Rain pH	SM4500 H+B	6.28 SU	CET Laboratories
Hardness	EPA 200.7	96 MG/L	CET Laboratories
Conductivity	2510B	260 UMHOS/CM	CET Laboratories
Oil & Grease	EPA 1664A	ND MG/L	CET Laboratories
COD	SM 5220	24 MG/L	CET Laboratories
Turbidity	EPA 180.1	1.4 NTU	CET Laboratories
TSS	SM 2540 D	ND MG/L	CET Laboratories
TP	EPA 365.4	ND MG/L	CET Laboratories
Ammonia	EPA 350.1	ND MG/L	CET Laboratories
TKN	EPA 351.2	ND MG/L	CET Laboratories
NO_3+NO_2	EPA 300.0	0.72+ND<0.1 MG/L	CET Laboratories
E. coli	SM9223B	60.9 MPN/100mL	CET Laboratories

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Darren Oustafine
(Print Name)

Signature: _____ Date: 3/30/16

6

80 Lupes Drive
Stratford, CT 06615

COMPLETE ENVIRONMENTAL TESTING, INC.

Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cetl@cetlabs.com

Client: Mr. Darren Oustafine
Darien Public Works
Town Hall - 2 Renshaw Rd
Darien, CT 06820

Analytical Report
CET# 6030292

Report Date:March 29, 2016
Project: MS4 Stormwaters

Connecticut Laboratory Certificate: PH 0116
Massachusetts laboratory Certificate: M-CT903

NELAP ACCREDITED TNI LABORATORY

New York Certification: 11982
Rhode Island Certification: 199

CET # : 6030292
Project: MS4 Stormwaters

SAMPLE SUMMARY

The sample(s) were received at 9.0°C.

This report contains analytical data associated with following samples only.

Sample ID	Laboratory ID	Matrix	Collection Date/Time	Receipt Date
Noroton Culvert	6030292-01	Stormwater	3/14/2016	03/14/2016
Old Kings Hwy South	6030292-02	Stormwater	3/14/2016	03/14/2016
145 Middlesex	6030292-03	Stormwater	3/14/2016	03/14/2016
Middlesex Leroy	6030292-04	Stormwater	3/14/2016	03/14/2016
GWR @ Prospect	6030292-05	Stormwater	3/14/2016	03/14/2016
GWR @ Salisbury	6030292-06	Stormwater	3/14/2016	03/14/2016
pH of Rain	6030292-07	Stormwater	3/11/2016	03/14/2016

Analyte: Chemical Oxygen Demand [SM 5220 D]

Analyst: AB

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**46**	5.0	mg/L	1	B6C1609	03/16/2016	03/16/2016 14:35	
6030292-02	Old Kings Hwy South	**120**	5.0	mg/L	1	B6C1609	03/16/2016	03/16/2016 14:35	
6030292-03	145 Middlesex	**30**	5.0	mg/L	1	B6C1609	03/16/2016	03/16/2016 14:35	
6030292-04	Middlesex Leroy	**82**	5.0	mg/L	1	B6C1609	03/16/2016	03/16/2016 14:35	
6030292-05	GWR @ Prospect	**12**	5.0	mg/L	1	B6C1609	03/16/2016	03/16/2016 14:35	
6030292-06	GWR @ Salisbury	**24**	5.0	mg/L	1	B6C1609	03/16/2016	03/16/2016 14:35	

Analyte: Nitrite as N [EPA 300.0] NO2

Analyst: CC

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	ND	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 17:44	
6030292-02	Old Kings Hwy South	ND	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:00	
6030292-03	145 Middlesex	ND	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:17	
6030292-04	Middlesex Leroy	ND	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:34	
6030292-05	GWR @ Prospect	ND	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:50	
6030292-06	GWR @ Salisbury	ND	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 20:13	

Analyte: Nitrate as N [EPA 300.0] NO3

Analyst: CC

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**3.4**	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 17:44	
6030292-02	Old Kings Hwy South	**0.53**	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:00	
6030292-03	145 Middlesex	**1.9**	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:17	
6030292-04	Middlesex Leroy	**1.6**	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:34	
6030292-05	GWR @ Prospect	**1.5**	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 18:50	
6030292-06	GWR @ Salisbury	**0.72**	0.10	mg/L	1	B6C1509	03/14/2016	03/14/2016 20:13	

CET # : 6030292
Project: MS4 Stormwaters

Analyte: Ammonia as N [EPA 350.1]

Analyst: CC

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**0.24**	0.10	mg/L	1	B6C1612	03/16/2016	03/16/2016 15:55	
6030292-02	Old Kings Hwy South	**0.59**	0.10	mg/L	1	B6C1612	03/16/2016	03/16/2016 15:55	
6030292-03	145 Middlesex	**0.40**	0.10	mg/L	1	B6C1612	03/16/2016	03/16/2016 15:55	
6030292-04	Middlesex Leroy	**0.25**	0.10	mg/L	1	B6C1612	03/16/2016	03/16/2016 15:55	
6030292-05	GWR @ Prospect	**0.14**	0.10	mg/L	1	B6C1612	03/16/2016	03/16/2016 15:55	
6030292-06	GWR @ Salisbury	ND	0.10	mg/L	1	B6C1612	03/16/2016	03/16/2016 15:55	

Analyte: Phosphorous, Total [EPA 365.4]

Analyst: CC

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	ND	0.10	mg/L	1	B6C2211	03/23/2016	03/23/2016 13:49	
6030292-02	Old Kings Hwy South	**0.18**	0.10	mg/L	1	B6C2211	03/23/2016	03/23/2016 13:49	
6030292-03	145 Middlesex	ND	0.10	mg/L	1	B6C2211	03/23/2016	03/23/2016 13:49	
6030292-04	Middlesex Leroy	ND	0.10	mg/L	1	B6C2211	03/23/2016	03/23/2016 13:49	
6030292-05	GWR @ Prospect	ND	0.10	mg/L	1	B6C2211	03/23/2016	03/23/2016 13:49	
6030292-06	GWR @ Salisbury	ND	0.10	mg/L	1	B6C2211	03/23/2016	03/23/2016 13:49	

Analyte: Oil and Grease [EPA 1664A]

Analyst: CC

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	ND	5.0	mg/L	1	B6C1718	03/17/2016	03/17/2016 15:40	
6030292-02	Old Kings Hwy South	ND	5.0	mg/L	1	B6C1718	03/17/2016	03/17/2016 15:40	
6030292-03	145 Middlesex	ND	5.0	mg/L	1	B6C1718	03/17/2016	03/17/2016 15:40	
6030292-04	Middlesex Leroy	ND	5.0	mg/L	1	B6C1718	03/17/2016	03/17/2016 15:40	
6030292-05	GWR @ Prospect	ND	5.0	mg/L	1	B6C1718	03/17/2016	03/17/2016 15:40	
6030292-06	GWR @ Salisbury	ND	5.0	mg/L	1	B6C1718	03/17/2016	03/17/2016 15:40	

Analyte: Total Suspended Solids [SM 2540 D]

Analyst: DH

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**44**	5.0	mg/L	1	B6C1625	03/16/2016	03/16/2016 15:30	
6030292-02	Old Kings Hwy South	**47**	5.0	mg/L	1	B6C1625	03/16/2016	03/16/2016 15:30	
6030292-03	145 Middlesex	**14**	5.0	mg/L	1	B6C1625	03/16/2016	03/16/2016 15:30	
6030292-04	Middlesex Leroy	ND	5.0	mg/L	1	B6C1625	03/16/2016	03/16/2016 15:30	
6030292-05	GWR @ Prospect	ND	5.0	mg/L	1	B6C1625	03/16/2016	03/16/2016 15:30	
6030292-06	GWR @ Salisbury	ND	5.0	mg/L	1	B6C1625	03/16/2016	03/16/2016 15:30	

Analyte: Total Kjeldahl Nitrogen (TKN) [EPA 351.2]

Analyst: CC

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**1.7**	1.0	mg/L	1	B6C2212	03/23/2016	03/23/2016 16:43	
6030292-02	Old Kings Hwy South	**2.2**	1.0	mg/L	1	B6C2212	03/23/2016	03/23/2016 16:43	
6030292-03	145 Middlesex	**1.1**	1.0	mg/L	1	B6C2212	03/23/2016	03/23/2016 16:43	
6030292-04	Middlesex Leroy	ND	1.0	mg/L	1	B6C2212	03/23/2016	03/23/2016 16:43	
6030292-05	GWR @ Prospect	ND	1.0	mg/L	1	B6C2212	03/23/2016	03/23/2016 16:43	
6030292-06	GWR @ Salisbury	ND	1.0	mg/L	1	B6C2212	03/23/2016	03/23/2016 16:43	

Analyte: Turbidity [EPA 180.1]

Analyst: MH

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**13**	NA	NTU	1	B6C1508	03/15/2016	03/15/2016 09:18	
6030292-02	Old Kings Hwy South	**36**	NA	NTU	1	B6C1508	03/15/2016	03/15/2016 09:18	
6030292-03	145 Middlesex	**9.9**	NA	NTU	1	B6C1508	03/15/2016	03/15/2016 09:18	
6030292-04	Middlesex Leroy	**2.2**	NA	NTU	1	B6C1508	03/15/2016	03/15/2016 09:18	
6030292-05	GWR @ Prospect	**1.5**	NA	NTU	1	B6C1508	03/15/2016	03/15/2016 09:18	
6030292-06	GWR @ Salisbury	**1.4**	NA	NTU	1	B6C1508	03/15/2016	03/15/2016 09:18	

CET # : 6030292
Project: MS4 Stormwaters

Analyte: pH [SM 4500-H B]

Analyst: KP

pH analyzed in lab

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**7.27**	NA	pH Units	1	B6C1505	03/14/2016	03/14/2016 16:30	
6030292-02	Old Kings Hwy South	**6.75**	NA	pH Units	1	B6C1505	03/14/2016	03/14/2016 16:33	
6030292-03	145 Middlesex	**7.02**	NA	pH Units	1	B6C1505	03/14/2016	03/14/2016 16:36	
6030292-04	Middlesex Leroy	**7.05**	NA	pH Units	1	B6C1505	03/14/2016	03/14/2016 16:38	
6030292-05	GWR @ Prospect	**7.67**	NA	pH Units	1	B6C1505	03/14/2016	03/14/2016 16:41	
6030292-06	GWR @ Salisbury	**7.27**	NA	pH Units	1	B6C1505	03/14/2016	03/14/2016 16:43	
6030292-07	pH of Rain	**6.28**	NA	pH Units	1	B6C1505	03/14/2016	03/14/2016 16:47	

Analyte: Conductivity [SM 2510 B]

Analyst: MH

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**780**	1.0	umhos/cm	1	B6C1539	03/15/2016	03/15/2016 16:47	
6030292-02	Old Kings Hwy South	**340**	1.0	umhos/cm	1	B6C1539	03/15/2016	03/15/2016 16:47	
6030292-03	145 Middlesex	**230**	1.0	umhos/cm	1	B6C1539	03/15/2016	03/15/2016 16:47	
6030292-04	Middlesex Leroy	**380**	1.0	umhos/cm	1	B6C1539	03/15/2016	03/15/2016 16:47	
6030292-05	GWR @ Prospect	**380**	1.0	umhos/cm	1	B6C1539	03/15/2016	03/15/2016 16:47	
6030292-06	GWR @ Salisbury	**260**	1.0	umhos/cm	1	B6C1539	03/15/2016	03/15/2016 16:47	

Analyte: Total Hardness [EPA 200.7]

Analyst: Various

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**170**	0.46	mg/L	1				
6030292-02	Old Kings Hwy South	**28**	0.46	mg/L	1				
6030292-03	145 Middlesex	**73**	0.46	mg/L	1				
6030292-04	Middlesex Leroy	**110**	0.46	mg/L	1				
6030292-05	GWR @ Prospect	**110**	0.46	mg/L	1				
6030292-06	GWR @ Salisbury	**96**	0.46	mg/L	1				

Testing Performed at: PH-0535

Analyte: E Coli [SM 9223 B]

Analyst: subcontract

Matrix: Stormwater

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
6030292-01	Noroton Culvert	**579.4**	0	MPN/100 mL	1		03/15/2016	03/15/2016 00:00	
6030292-02	Old Kings Hwy South	**344.8**	0	MPN/100 mL	1		03/15/2016	03/15/2016 00:00	
6030292-03	145 Middlesex	**648.8**	0	MPN/100 mL	1		03/15/2016	03/15/2016 00:00	
6030292-04	Middlesex Leroy	**66.3**	0	MPN/100 mL	1		03/15/2016	03/15/2016 00:00	
6030292-05	GWR @ Prospect	**517.2**	0	MPN/100 mL	1		03/15/2016	03/15/2016 00:00	
6030292-06	GWR @ Salisbury	**60.9**	0	MPN/100 mL	1		03/15/2016	03/15/2016 00:00	

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,

David Ditta
Laboratory Director

Report Comments:

Sample Result Flags:
E- The result is estimated, above the calibration range.
H- The surrogate recovery is above the control limits.
L- The surrogate recovery is below the control limits.
B- The compound was detected in the laboratory blank.
P- The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
D- The RPD between the sample and the sample duplicate is high. Sample Homogenity may be a problem.
+- The Surrogate was diluted out.
*C1- The Continuing Calibration did not meet method specifications and was biased low for this analyte. Increased uncertainty is associated with the reported value which is likely to be biased low.
*C2- The Continuing Calibration did not meet method specifications and was biased high for this analyte. Increased uncertainty is associated with the reported value which is likely to be biased high.
*F1- The Laboratory Control Sample recovery is outside of control limits. Reported value for this analyte is likely to be biased on the low side.
*F2- The Laboratory Control Sample recovery is outside of control limits. Reported value for this analyte is likely to be biased on the high side.
I- The Analyte exceeds %RSD limits for the Initial Calibration. This is a non-directional bias.

All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

Complete Environmental Testing is only responsible for the certified testing and is not directly responsible for the integrity of the sample before laboratory receipt.

ND is None Detected at the specified detection limit
All analyses were performed in house unless a Reference Laboratory is listed.
Samples will be disposed of 30 days after the report date.

CET # : 6030292
Project: MS4 Stormwaters

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 1664A in Water	
Oil and Grease	CT,NY
EPA 180.1 in Water	
Turbidity	CT
EPA 300.0 in Water	
Nitrate as N	CT
Nitrite as N	CT
EPA 350.1 in Water	
Ammonia as N	CT
EPA 351.2 in Water	
Total Kjeldahl Nitrogen (TKN)	CT
EPA 365.4 in Water	
Phosphorous, Total	CT
SM 2510 B in Water	
Conductivity	CT
SM 2540 D in Water	
Total Suspended Solids	CT,NY
SM 4500-H B in Water	
pH	CT,MA,RI
SM 5220 D in Water	
Chemical Oxygen Demand	CT
SM 9222 B in Water	
E Coli	CT

Complete Environmental Testing operates under the following certifications and accreditations:

Code	Description	Number	Expires
CT	Connecticut Public Health	PH0116	09/30/2016
MA	Massachusetts Laboratory Certification	M-CT903	06/30/2016
NY	New York Certification (NELAC)	11982	04/01/2016
RI	Rhode Island Certification	LAO 00227	09/30/2016

6030292

al Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

ompleted form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Town of Darien

Mailing Address: 2 Rensahw Road - Town Hall

Contact Person: Darren Oustafine Title: Assistant Director, DPW

Phone: 203-656-7365 Permit Registration #GSM: 000046

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): 1 Noroton Culvert, N41,3.895', W73,29.308'

Please check the appropriate area description: ☐ Industrial ☐ Commercial ☒ Residential

Receiving Water (name, basin): Stony Brook

Time of Start of Discharge: Continuous

Date/Time Collected: March 26, 2015 Water Temperature: 9 C

Person Collecting Sample: Darren Oustafine

Storm Magnitude (inches): >1" (app) Storm Duration (hours): > 6 hours

Date of Previous Storm Event: 3/17/15 rain, 3/20/15 snow

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM4500 H B	6.02 pH units	CET Laboratories
Rain pH	SM4500 H+B	8.71 SU	CET Laboratories
Hardness	EPA 200.7	75 MG/L	CET Laboratories
Conductivity	2510B	430 UMHOS/CM	CET Laboratories
Oil & Grease	EPA 1664A	6.0 MG/L	CET Laboratories
COD	SM 5220	200 MG/L	CET Laboratories
Turbidity	EPA 180.1	210 NTU	CET Laboratories
TSS	SM 2540 D	250 MG/L	CET Laboratories
TP	EPA 365.4	0.50 MG/L	CET Laboratories
Ammonia	EPA 350.1	0.43 MG/L	CET Laboratories
TKN	EPA 351.2	3.2 MG/L	CET Laboratories
NO_3+NO_2	EPA 300.0	0.92+ND<0.1 MG/L	CET Laboratories
E. coli	SM9223B	64.8 MPN/100mL	CET Laboratories

MS4 - Stations 1, 2, 3, 4, 5, 6, ALL PARAMETERS

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Darren Oustafine
(Print Name)

Signature: [signature] Date: 5/13/15

CET

COMPLETE ENVIRONMENTAL TESTING, INC.

6030292

CET #

Volatile Soils Only:

Date and Time in Freezer

Client:

CET:

N OF CUSTODY RECORD

80 Lupes Drive
Stratford, CT 06615
Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet1@cetlabs.com

Matrix: A=Air, S=Soil, W=Water, DW=Drinking W., C=Cassette Solid, Wipe, Other (Specify)

Turnaround Time ** (check one): Same Day * | Next Day * | 2-3 Days * | Std (5-7 Days)

Organics: 8260 CT List | 8260 Aromatics | 8260 Halogens | SPLP 8260 | TCLP 8260 | CT ETPH | 8270 CT List | 8270 PNAs | PCBs | Pesticides | Herbicides

Metals (check all that apply): 13 Priority Poll | 8 RCRA | TOTAL | TCLP | SPLP | Field Filtered | Lab To Filter

Additional Analysis | TOTAL # OF CONT. | NOTE #

Sample ID	Date/Time
MS41-NORTON CULVERT	
MS42 MIDDLESEX TURNPIKE/PARKING HWY SOUTH	
MS43 145 MIDDLESEX	
MS44 MIDDLESEX LEDGE	
MS45 CLWR@PROSPECT	
MS46 CLWR@SALISBURY	
INDACT1 BRUSH	
INDACT2 SALT/GARAGE	

PRESERVATIVE (Cl–HCl, N–HNO_3, S–H_2SO_4, Na–NaOH, C=Cool, O–Other)

CONTAINER TYPE (P–Plastic, G–Glass, V–Vial, O–Other)

Soil VOCs Only (M=MeOH B=Sodium Bisulfate W=Water F=Empty Vial E=Encore)

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
DD	3/14/16 1:11 PM	MHS
GHS	3/14/16 13:50	DJONES

NOTES:
- MS4 #1 IND ACT. ALL PARAMETERS.
- SUPPLY MORE REPLACEMENT BOTTLES.
- 3/14/16 See Attached

Client / Reporting Information

Company Name: TOWN OF DARIEN DEPT. OF PUBLIC WORKS

Address: 2 RENSHAW RD, -TOWN HALL

City: DARIEN State: CT Zip: 06820

Report To: DARREN OUSTAFINE E-mail: DOUSTAFINE@DARIENCT.GOV

Phone #: 203-656-7365 Fax #: 203-656-7485

Project Information

Project Contact: PO #:

Project: Project #:

Location: Collector(s):

QA/QC ☐ Std ☐ Site Specific (MS/MSD) * ☐ RCP Pkg * ☐ DQAW *

Data Report ☐ Email ☐ PDF ☐ Excel ☐ Other

RSR Reporting Limits (check one) ☐ GA ☐ GB ☐ SWP ☐ Other (specify)

Lab Use:
Evidence of Cooling:
Temp Upon Receipt 9.0 °C or (N)

SHEET ____ OF ____

* Additional charge may apply. ** TAT begins when the samples are received at the Lab and all issues are resolved. TAT for samples received after 3 p.m. will start on the next business day.

REV. 7/1/10

Tighe&Bond

APPENDIX J

INLAND WETLANDS AND WATERCOURSES

REGULATIONS

TOWN OF DARIEN

ENVIRONMENTAL
PROTECTION
COMMISSION
EFFECTIVE DATE OF REGULATIONS: April 17, 2016

TOWN OF DARIEN, CONNECTICUT

INLAND WETLANDS AND WATERCOURSES REGULATIONS

EFFECTIVE DATE: April 17, 2016

TABLE OF CONTENTS

PREAMBLE

The inland wetlands and watercourses of the State of Connecticut are an indispensable and irreplaceable but fragile natural resource with which the citizens of the state have been endowed. The wetlands and watercourses are an interrelated web of nature essential to an adequate supply of surface and underground water; to hydrological stability and control of flooding and erosion; to the recharging and purification of groundwater; and to the existence of many forms of animal, aquatic and plant life. Many inland wetlands and watercourses have been destroyed or are in danger of destruction because of unregulated use by reason of the deposition, filling or removal of material, the diversion or obstruction of water flow, the erection of structures and other uses, all of which have despoiled, polluted and eliminated wetlands and watercourses. Such unregulated activity has had, and will continue to have, a significant, adverse impact on the environment and ecology of the state of Connecticut and has and will continue to imperil the quality of the environment thus adversely affecting the ecological, scenic, historic and recreational values and benefits of the state for its citizens now and forever more. The preservation and protection of the wetlands and watercourses from random, unnecessary, undesirable and unregulated uses, disturbance or destruction is in the public interest and is essential to the health, welfare and safety of the citizens of the state. It is, therefore, the purpose of these regulations to protect the citizens of the state by making provisions for the protection, preservation, maintenance and use of the inland wetlands and watercourses by minimizing their disturbance and pollution; maintaining and improving water quality in accordance with the highest standards set by federal, state or local authority; preventing damage from erosion, turbidity or siltation; preventing loss of fish and other beneficial aquatic organisms, wildlife and vegetation and the destruction of the natural habitats thereof; deterring and inhibiting the danger of flood and pollution; protecting the quality of wetlands and watercourses for their conservation, economic, aesthetic, recreational and other public and private uses and values; and protecting the state's potable fresh water supplies from the dangers of drought, overdraft, pollution, misuse and mismanagement by providing an orderly process to balance the need for the economic growth of the state and the use of its land with the need to protect its environment and ecology in order to forever guarantee to the people of the state, the safety of such natural resources for their benefit and enjoyment and for the benefit and enjoyment of generations yet unborn.

Section 1
Title and Authority

1.1 These regulations shall be known as the "Inland Wetlands and Watercourses Regulations" of the Town of Darien

1.2 The Environmental Protection Commission of the Town of Darien was established in accordance with an ordinance adopted and shall implement the purposes and provisions of these regulations and the Inland Wetlands and Watercourses Act in the Town of Darien

1.3 These regulations have been adopted and may be amended, from time to time, in accordance with the provisions of the Inland Wetlands and Watercourses Act and these regulations.

1.4 The Agency shall enforce the Inland Wetlands and Watercourses Act and shall issue, issue with terms, conditions, limitations or modifications, or deny permits for all regulated activities in the Town of Darien pursuant to sections 22a-36 to 22a-45, inclusive, of the Connecticut General Statutes, as amended.

Section 2
Definitions

2.1 As used in these regulations:

"Act" means the Inland Wetlands and Watercourses Act, sections 22a-36 through 22a-45, inclusive, of the Connecticut General Statutes, as amended.

"Agency" means the Environmental Protection Commission of the Town of Darien

"Bogs" are watercourses distinguished by evergreen trees and shrubs underlain by peat deposits, poor or very poor drainage, and highly acidic conditions.

"Clear-cutting" means the harvest of timber in a fashion which removes all trees down to a two inch diameter at breast height.

"Commissioner of Environmental Protection" means the commissioner of the State of Connecticut Department of Energy & Environmental Protection.

"Continual flow" means a flow of water which persists for an extended period of time; this flow may be interrupted during periods of drought or during the low flow period of the annual hydrological cycle, June through September, but it recurs in prolonged succession.

"Deposit" includes, but shall not be limited to fill, grade, dump, place, discharge or emit.

"Discharge" means emission of any water, substance, or material into waters of the state whether or not such substance causes pollution.

"Essential to the farming operation" means that the proposed activity is necessary and indispensable to sustain farming activities on the farm.

"Farming" shall be consistent with the definition as noted in section 1-1(q) of the Connecticut General Statutes. (see Appendix A)

“Feasible” means able to be constructed or implemented consistent with sound engineering principles.

“License” means the whole or any part of any permit, certificate of approval or similar form of permission which may be required of any person by the provisions of sections 22a-36 to 22a-45, inclusive.

"Management practice" means a practice, procedure, activity, structure or facility designed to prevent or minimize pollution or other environmental damage or to maintain or enhance existing environmental quality. Such management practices include, but are not limited to: erosion and sedimentation controls; restrictions on land use or development; construction setbacks from wetlands or watercourses; proper disposal of waste materials; procedures for equipment maintenance to prevent fuel spillage; construction methods to prevent flooding or disturbance of wetlands and watercourses; procedures for maintaining continuous stream flows; confining construction that must take place in watercourses to times when water flows are low and fish and wildlife will not be adversely affected.

"Marshes" are watercourses that are distinguished by the absence of trees and shrubs and the dominance of soft-stemmed herbaceous plants. The water table in marshes is at or above the ground surface throughout the year and areas of open water six inches or more in depth are common, but seasonal water table fluctuations are encountered.

"Material" means any substance, solid or liquid, organic or inorganic, including but not limited to soil, sediment, aggregate, land, gravel, clay, bog, mud, debris, sand, refuse or waste.

"Municipality" means the Town of Darien.

"Nurseries" means places where plants are grown for sale, transplanting, or experimentation.

"Permit" see license

"Permittee" means the person to whom a license has been issued.

"Person" means any person, firm, partnership, association, corporation, limited liability company, company, organization or legal entity of any kind, including municipal corporations, governmental agencies or subdivisions thereof.

"Pollution" means harmful thermal effect or the contamination or rendering unclean or impure of any waters of the state by reason of any waste or other materials discharged or deposited therein by any public or private sewer or otherwise so as directly or indirectly to come in contact with any waters. This includes, but is not limited to, erosion and sedimentation resulting from any filling, land clearing or excavation activity.

“Prudent” means economically and otherwise reasonable in light of the social benefits to be derived from the proposed regulated activity provided cost may be considered in deciding what is prudent and further provided a mere showing of expense will not necessarily mean an alternative is imprudent.

"Regulated activity" means any operation within or use of a wetland or watercourse involving removal or deposition of material, or any obstruction, construction, alteration or pollution, of such

wetlands or watercourses, but shall not include the specified activities in section 4 of these regulations.

1. grading, filling, excavation, or any other earth-disturbing activities; or removal or deposition of any material; or removal of any existing vegetation within fifty (50) feet of wetlands or watercourses.

2. obstructions, whether man-made or natural, of wetlands or watercourses.

3. the location of any portion of any structure including any earth-disturbing activities reasonably associated herewith, within 100 feet of Holly Pond or Gorham's Pond, or the mean high water line of the Noroton, Five Mile, or Goodwives River, or Tokeneke, or Stony Brook; within 50 feet of all other watercourses or wetlands.

The agency may rule that any other activity located within such upland review area or in any other non-wetland or non-watercourse area is likely to impact or affect wetlands or watercourses and is a regulated activity.

"Remove" includes, but shall not be limited to drain, excavate, mine, dig, dredge, suck, bulldoze, dragline or blast.

"Rendering unclean or impure" means any alteration of the physical, chemical or biological properties of any waters of the state, including, but not limited to, change in odor, color, turbidity or taste.

"Significant impact" means any activity, including, but not limited to, the following activities which may have a major effect:

1. Any activity involving deposition or removal of material which will or may have a substantial effect on the wetland or watercourse or on wetlands or watercourses outside the area for which the activity is proposed.
2. Any activity which substantially changes the natural channel or may inhibit the natural dynamics of a watercourse system.
3. Any activity which substantially diminishes the natural capacity of an inland wetland or watercourse to: support aquatic, plant or animal life and habitats; prevent flooding; supply water; assimilate waste; facilitate drainage; provide recreation or open space; or perform other functions.
4. Any activity which is likely to cause or has the potential to cause substantial turbidity, siltation or sedimentation in a wetland or watercourse.
5. Any activity which causes substantial diminution of flow of a natural watercourse or groundwater levels of the wetland or watercourse.
6. Any activity which is likely to cause or has the potential to cause pollution of a wetland or watercourse.
7. Any activity which damages or destroys unique wetland or watercourse areas or such areas having demonstrable scientific or educational value.

"Soil scientist" means an individual duly qualified in accordance with standards set by the federal Office of Personnel Management.

"Swamps" are watercourses that are distinguished by the dominance of wetland trees and shrubs.

"Submerged lands" means those lands which are inundated by water on a seasonal or more frequent basis.

"Town" means the Town of Darien.

"Waste" means sewage or any substance, liquid, gaseous, solid or radioactive, which may pollute or tend to pollute any of the wetlands and watercourses of the Town.

"Watercourses" means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the Town or any portion thereof not regulated pursuant to sections 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (a) evidence of scour or deposits of recent alluvium or detritus, (b) the presence of standing or flowing water for a duration longer than a particular storm incident, and (c) the presence of hydrophytic vegetation.

"Wetlands" means land, including submerged land as defined in this section, not regulated pursuant to sections 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial and floodplain by the National Cooperative Soils Survey, as it may be amended from time to time, of the Natural Resources Conservation Service of the U.S. Department of Agriculture (USDA). Such areas may include filled, graded, or excavated sites which possess an aquic (saturated) soil moisture regime as defined by the USDA Cooperative Soil Survey.

Section 3
Inventory of Inland Wetlands and Watercourses

3.1 The map of wetlands and watercourses entitled " Regulated Inland Wetlands and Watercourses" Darien Connecticut" delineates the general location and boundaries of inland wetlands and the general location of watercourses. Copies of this map are available for inspection at the office of the Town Clerk or the Agency. In all cases, the precise location of wetlands and watercourses shall be determined by the actual character of the land, the distribution of wetland soil types and location of watercourses. The Agency may use aerial photography, remote sensing imagery, resource mapping, soils maps, site inspection observations or other information in determining the location of the boundaries of wetlands and watercourses.

3.2 Any person may petition the Agency for an amendment to the map. All petitions for a map change shall be submitted in writing and shall include all relevant facts and circumstances which support the change. The petitioner shall bear the burden of proof regarding the proposed map amendment. Such proof may include, but not be limited to aerial photography, remote sensing imagery, resource mapping or other available information. The Agency may require such person to provide an accurate delineation of regulated areas in accordance with section 15 of these regulations.

3.3 The Agency shall maintain a current inventory of regulated areas within the town. The Agency may amend its map as more accurate information becomes available.

3.4 All map amendments are subject to the public hearing process outlined in section 15 of these

regulations.

Section 4
Permitted Uses as of Right & Nonregulated Uses

4.1 The following operations and uses shall be permitted in inland wetlands and watercourses, as of right:

a. grazing, farming, nurseries, gardening and harvesting of crops and farm ponds of three acres or less essential to the farming operation, and activities conducted by, or under the authority of, the Department of Energy & Environmental Protection for the purposes of wetland or watercourse restoration or enhancement or mosquito control. The provisions of this subdivision shall not be construed to include road construction or the erection of buildings not directly related to the farming operation, relocation of watercourses with continual flow, filling or reclamation of wetlands or watercourses with continual flow, clear cutting of timber except for the expansion of agricultural crop land, the mining of top soil, peat, sand, gravel or similar material from wetlands or watercourses for the purposes of sale;
b. a residential home (A) for which a building permit has been issued or (B)on a subdivision lot, provided the permit has been issued or the subdivision has been approved by a municipal planning, zoning or planning and zoning commission as of the effective date of promulgation of the municipal regulations pursuant to subsection (b) of section 22a-42a, or as of July 1, 1974, which ever is earlier, and further provided no residential home shall be permitted as of right pursuant to this subdivision unless the permit was obtained on or before July 1, 1987;
c. boat anchorage or mooring;
d. uses incidental to the enjoyment and maintenance of residential property, such property defined as equal to or smaller than the largest minimum residential lot site permitted anywhere in the municipality provided that in any town where there are no zoning regulations establishing minimum residential lot sites, the largest minimum lot site shall be two acres. Such incidental uses shall include maintenance of existing structures and landscaping, but shall not include removal or deposition of significant amounts of material from or onto a wetland or watercourse, or diversion or alteration of a watercourse;
e. Construction and operation, by water companies as defined by section 16-1 of the Connecticut General Statutes or by municipal water supply systems as provided for in chapter 102 of the Connecticut General Statutes, of dams, reservoirs and other facilities necessary to the impounding, storage and withdrawal of water in connection with public water supplies except as provided in sections 22a-401and 22a-403 of the Connecticut General Statutes
f. Maintenance relating to any drainage pipe which existed before the effective date of any municipal regulations adopted pursuant to section 22a-42a of the Connecticut General Statutes or July 1, 1974, whichever is earlier, provided such pipe is on property which is zoned as residential but which does not contain hydrophytic vegetation. For purposes of this subdivision, “maintenance” means the removal of accumulated leaves, soil, and other debris whether by hand or machine, while the pipe remains in place and.
g. Withdrawals of water for fire emergency purposes.

4.2 The following operations and uses shall be permitted, as nonregulated uses in wetlands and watercourses, provided they do not disturb the natural and indigenous character of the wetland or watercourse by removal or deposition of material, alteration or obstruction of water flow or pollution of the wetland or watercourse:

a. conservation of soil, vegetation, water, fish, shellfish and wildlife; and

b. outdoor recreation including play and sporting areas, golf courses, field trials, nature study, hiking, horseback riding, swimming, skin diving, camping, boating, water skiing, trapping, hunting, fishing and shellfishing where otherwise legally permitted and regulated.
c. The installation of a dry hydrant by or under the authority of a municipal fire department provided such dry hydrant is used only for firefighting purposes and there is no alternative access to a public water supply. For purposes of this section, "dry hydrant" means a non-pressurized pipe system that (A) is readily accessible to fire department apparatus from a proximate public road, (B) provides for the withdrawal of water by suction to such fire department apparatus and (C) is permanently installed into an existing lake, pond or stream that is a dependable source of water.

4.3 All activities in wetlands or watercourses involving filling, excavating, dredging, clear cutting, clearing, or grading or any other alteration or use of a wetland or watercourse not specifically permitted by this section and otherwise defined as a regulated activity by these regulations shall require a permit from the Agency in accordance with section 6 of these regulations, or for certain regulated activities located outside of wetlands and watercourses from the duly authorized agent in accordance with section 12 of these regulations.

4.4 To carry out the purposes of this section, any person proposing a permitted operation and use or a nonregulated operation and use shall, prior to commencement of such operation and use, notify the Agency on a form provided by it, and provide the Agency with sufficient information to enable it to properly determine that the proposed operation and use is a permitted or nonregulated use of a wetland or watercourse. The Agency shall rule that the proposed operation and use or portion of it is a permitted or nonregulated operation and use or that the proposed operation and use is a regulated activity and a permit is required.

Section 5
Activities Regulated Exclusively by the Commissioner of Environmental Protection

5.1 The Commissioner of Environmental Protection shall have exclusive jurisdiction over regulated activities in or affecting wetlands or watercourses, undertaken by any department, agency or instrumentality of the State of Connecticut, except any local or regional board of education, pursuant to sections 22a-39 or 22a-45a of the Connecticut General Statues.

5.2 The Commissioner of Environmental Protection shall have exclusive jurisdiction over tidal wetlands designated and regulated pursuant to sections 22a-28 through 22a-35 of the Connecticut General Statutes, as amended.

5.3 The Commissioner of Environmental Protection shall have exclusive jurisdiction over activities authorized under a dam repair or removal order issued by the Commissioner of Environmental Protection under section 22a-402 of the Connecticut General Statutes or a permit issued by the Commissioner of Environmental Protection under sections 22a-403 of the Connecticut General Statutes. Any person receiving such dam repair or removal order or permit shall not be required to obtain a permit from a municipal wetlands agency for any action necessary to comply with said dam order or to carry out the activities authorized by said permit.

5.4 The Commissioner of Environmental Protection shall have exclusive jurisdiction over the discharge of fill or dredged materials into the wetlands and watercourses of the state pursuant to section 401 of the Federal Clean Water Act, as amended, for activities regulated by the U.S. Army Corps of Engineers under section 404 of the Federal Clean Water Act.

Section 6
Regulated Activities to be Licensed

6.1 No person shall conduct or maintain a regulated activity without first obtaining a permit for such activity from the Environmental Protection Commission of the Town of Darien.

6.2 Any person found to be conducting or maintaining a regulated activity without the prior authorization of the Agency, or violating any other provision of these regulations, shall be subject to the enforcement proceedings and penalties prescribed in section 14 of these regulations and any other remedies as provided by law.

Section 7
Application Requirements

7.1 Any person intending to conduct a regulated activity or to renew or amend a permit to conduct such activity, shall apply for a permit on a form provided by the Agency. The application shall contain the information described in this section and any other information the Agency may reasonably require. Application forms may be obtained in the offices of the Darien Town Clerk or the Agency.

7.2 If an application to the Town of Darien Planning and Zoning Commission for subdivision or resubdivision of land involves land containing a wetland or watercourse, the applicant shall, in accordance with Section 8-3(g), 8-3c, or 8-26, as applicable, of the Connecticut General Statutes, submit an application for a permit to the Agency in accordance with this section, no later than the day the application is filed with such planning, zoning, or planning and zoning commission.

7.3 The application shall contain such information as is necessary for a fair and informed determination thereon by the Agency.

7.4 A prospective applicant may request the Agency to determine whether or not a proposed activity involves a significant impact activity.

7.5 All applications shall include the following information in writing or on maps or drawings:

a. the applicant's name, home and business mailing addresses and telephone numbers; if the applicant is a Limited Liability Corporation or a Corporation the managing member's or responsible corporate officer's name, address, and telephone number;
b. the owner's name, mailing address and telephone number and written consent of the land owner if the applicant is not the owner of the land upon which the subject activity is proposed;
c. the applicant's interest in the land;
d. the geographical location of the land which is the subject of the proposed activity and a description of the land in sufficient detail to allow identification of the inland wetlands and watercourses, the area(s) (in acres or square feet) of wetlands or watercourses to be disturbed, soil type(s), and wetland vegetation;
e. the purpose and a description of the proposed activity and proposed erosion and sedimentation controls and other management practices and mitigation measures which may be considered as a condition of issuing a permit for the proposed regulated activity including, but not limited to, measures to (1) prevent or minimize pollution or other environmental

damage, (2) maintain or enhance existing environmental quality, or (3) in the following order of priority: restore, enhance and create productive wetland or watercourse resources;

f. alternative which would cause less or no environmental impact to wetlands or watercourses and why the alternative as set forth in the application was chosen; all such alternatives shall be diagramed on a site plan or drawing;
g. a site plan showing the proposed activity and existing and proposed conditions in relation to wetlands and watercourses and identifying any further activities associated with, or reasonably related to, the proposed regulated activity which are made inevitable by the proposed regulated activity and which may have an impact on wetlands or watercourses;
h. names and mailing addresses of adjacent land owners;
i. statement by the applicant that the applicant is familiar with all the information provided in the application and is aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information;
j. authorization for the members and agents of the Agency to inspect the subject land, at reasonable times, during the pendency of an application and for the life of the permit;
k. a completed DEEP reporting form; the Agency shall revise or correct the information provided by the applicant and submit the form to the Commissioner of Environmental Protection in accordance with section 22a-39-14 of the Regulations of Connecticut State Agencies;
l. any other information the Agency deems necessary to the understanding of what the applicant is proposing; and
m. submission of the appropriate filing fee based on the fee schedule established in section 19 of these regulations.

7.6 At the discretion of the Agency or its agent, or when the proposed activity involves a significant impact, additional information, based on the nature and anticipated effects of the activity, including but not limited to the following , is required:

a. site plans for the proposed activity and the land which will be affected thereby which show existing and proposed conditions, wetland and watercourse boundaries, land contours, boundaries of land ownership, proposed alterations and uses of wetlands and watercourses, and other pertinent features of the land and the proposed activity, prepared by a professional engineer, land surveyor, architect or landscape architect licensed by the state, or by such other qualified person;
b. engineering reports and analyses and additional drawings to fully describe the proposed activity including any filling, excavation, drainage or hydraulic modifications to watercourses and the proposed erosion and sedimentation control plan;
c. mapping of soil types consistent with the categories established by the National Cooperative Soil Survey of the U.S. Natural Resources Conservation Service; the wetlands shall be delineated in the field by a soil scientist and the soil scientist's field delineation shall be depicted on the site plans;
d. a description of the ecological communities and functions of the wetlands or watercourses involved with the application and the effects of the proposed activity on these communities and wetland functions;
e. a description of how the applicant will change, diminish, or enhance the ecological communities and functions of the wetlands or watercourses involved in the application and each alternative which would cause less or no environmental impact to wetlands or watercourses, and a description of why each alternative considered was deemed neither feasible nor prudent;
f. analysis of chemical or physical characteristics of any fill material; and

g. management practices and other measures designed to mitigate the impact of the proposed activity.

7.7 The applicant shall certify whether:

a. any portion of the property on which the regulated activity is proposed is located within 500 feet of the boundary of an adjoining municipality;
b. traffic attributable to the completed project on the site will use streets within the adjoining municipality to enter or exit the site;
c. sewer or water drainage from the project site will flow through and impact the sewage or drainage system within the adjoining municipality; or,
d. water run-off from the improved site will impact streets or other municipal or private property within the adjoining municipality.

7.8 Ten copies of all application materials shall be submitted to comprise a complete application unless an applicant is otherwise directed, in writing, by the Agency.

7.9 Any application to renew or amend an existing permit shall be filed with the Agency in accordance with section 8 of these regulations at least sixty-five (65) days prior to the expiration date of the permit. Any application to renew or amend such an existing permit shall contain the information required under section 7 of these regulations provided:

a. the application may incorporate the documentation and record of the prior application;
b. the application shall describe the extent of work completed at the time of filing and the schedule for completing the activities authorized in the permit;
d. the application shall state the reason why the authorized activity was not initiated or completed within the time specified in the permit;
d. the application shall describe any changes in facts or circumstances involved with or affecting wetlands or watercourses or use of the land for which the permit was issued;
e. the Agency may, prior to the expiration of a permit, accept an untimely application to renew such permit if the authorized activity is ongoing and allow the continuation of work beyond the expiration date if, in its judgment, the permit is likely to be renewed and the public interest or environment will be best served by not interrupting the activity;

7.10 Any application to renew a permit shall be granted upon request of the permit holder unless the Agency finds that there has been a substantial change in circumstances which requires a new permit application or an enforcement action has been undertaken with regard to the regulated activity for which the permit was issued provided (A) no permit shall be valid for more than 10 years and (B) no permit issued prior to July 1, 2006 or after July 2009 may be valid for more than 10 years and further provided that any permit issued prior to July 1, 2011 that did not expire prior to May 9, 2011 shall be valid for no more than 14 years.

7.11 For any permit application involving property subject to a conservation restriction or preservation restriction, the following shall apply:
a. for purposes of this section "conservation restriction means a limitation, whether or not stated in the form of a restriction, easement, covenant or condition, in any deed, will or other instrument executed by or on behalf of the owner of the land described therein, including but not limited to, the state or any political subdivision of the state, or in any order of taking such land whose purpose is to retain land or water areas predominantly in their natural, scenic or open condition or in agricultural, farming, forest or open space use.

b. for the purposes of this section, "preservation restriction" means a limitation, whether or not stated in the form of a restriction, easement, covenant or condition, in any deed, will or other instrument executed by or on behalf of the owner of land including but not limited to, the state or any political subdivision of the state, or in any order of taking of such land whose purpose is to preserve historically significant structures or sites.

c. no person shall file a permit application, other than for interior work in an existing building or for exterior work that does not expand or alter the footprint of an existing building, relating to property that is subject to a conservation easement or a preservation restriction unless the applicant provides proof that the application has provided written notice of such application, by certified mail, return receipt requested, to the party holding such restriction not later than sixty days prior to the filing of the permit application.

d. in lieu of such notice pursuant to subsection 7.11c the applicant may submit a letter from the holder of such restriction or from the holder's authorized agent, verifying that the application is in compliance with the terms of the restriction.

Section 8
Application Procedures

8.1 All petitions, applications, requests or appeals shall be submitted to the Environmental Protection Commission of the Town of Darien.

8.2 The Agency shall, in accordance with Connecticut General Statutes section 8-7d(f), notify the clerk of any adjoining municipality of the pendency of any application, petition, appeal, request or plan concerning any project on any site in which:

a. any portion of the property affected by a decision of the agency is within five hundred feet of the boundary of an adjoining municipality;
b. a significant portion of the traffic to the completed project on the site will use streets within the adjoining municipality to enter or exit the site;
c. a significant portion of the sewer or water drainage from the project on the site will flow through and significantly impact the drainage or sewerage system within the adjoining municipality; or
d. water run-off from the improved site will impact streets or other municipal or private property within the adjoining municipality.

Such notice shall be made by certified mail, return receipt requested, and shall be mailed within seven days of the date of receipt of the application, petition, appeal, request or plan.

8.3 When an application is filed to conduct or cause to be conducted a regulated activity upon an inland wetland or watercourse, any portion of which is within the watershed of a water company as defined in section 16-1 of the Connecticut General Statutes, the applicant shall provide written notice of the application to the water company and the Commissioner of Public Health in a format prescribed by said commissioner, provided such water company or said commissioner has filed a map showing the boundaries of the watershed on the land records of the municipality in which the application is made and with the inland wetlands agency of such municipality. Such notice shall be made by certified mail, return receipt requested, and shall be mailed not later than seven days after the date of the application. The water company and the Commissioner of Public Health, through a representative, may appear and be heard at any hearing on the application. Documentation of such notice shall be provided to the Agency.

8.4 The date of receipt of a petition, application, request or appeal shall be the day of the next regularly scheduled meeting of the Agency, immediately following the day of submission to the Agency or its agent of such petition, application, request or appeal or thirty-five days after such submission, whichever is sooner.

8.5 At any time during the review period, the applicant shall provide such additional information as the Agency may reasonably require. Requests for such additional information shall not stay the time limitations as set forth in subsection 11.2 of these regulations.

8.6 All applications shall be open for public inspection.

8.7 Incomplete applications may be denied.

Section 9
Public Hearings

9.1 The inland wetlands agency shall not hold a public hearing on an application unless the inland wetlands agency determines that the proposed activity may have a significant impact on wetlands or watercourses, a petition signed by at least twenty-five persons who are eighteen years of age or older and who reside in the municipality in which the regulated activity is proposed, requesting a hearing is filed with the inland wetlands agency not later than fourteen days after the date of receipt of such application, or the inland wetlands agency finds that a public hearing regarding such application would be in the public interest. The inland wetlands agency may issue a permit without a public hearing provided no petition provided for in this section is filed with the inland wetlands agency on or before the fourteenth day after the date of receipt of the application. Such hearing shall be held no later than sixty-five days after the receipt of such application. All applications and maps and documents relating thereto shall be open for public inspection. At such hearing any person or persons may appear and be heard.

9.2 Notice of the public hearing shall be published at least twice at intervals of not less than two days, the first not more than fifteen days and not fewer than ten days, and the last not less than two days before the date set for the hearing in a newspaper having a general circulation in each town where the affected wetland and watercourse is located.

9.3 The applicant or their representative shall notify each owner of property within 100 feet of the perimeter of the subject property of the time, place, date, and purpose of the hearing. This notification shall also include a description of the application and the nature of the proposed activity.

The latest records of the Darien Assessor's office shall be used by the applicant to determine a list of the names, addresses, and tax map/lot numbers of owners of property within 100 feet of the subject property. Each owner of a condominium within a condominium association shall be notified if any part of the condominium property is within 100 feet of the perimeter of the subject property.

Such notice shall be mailed not less than ten (10) days nor more than twenty (20) days prior to the scheduled public hearing. Notice shall be sent via U.S. Mail. The applicant shall obtain proof of mailing in the form of stamped U.S. Postal Service Certificates of Mailing. Notices sent "Return Receipt Requested" are not advisable

Section 10
Considerations for Decision

10.1 The Agency may consider the following in making its decision on an application:

a. The application and its supporting documentation
b. Reports from other agencies and commissions including but not limited to the Town of Darien:
   Planning and Zoning Commission
   Building Official
   Health Official
c. The Agency may also consider comments on any application from the Fairfield County Soil and Water Conservation District, the Southwestern Regional Planning Agency or other regional organizations (i.e. Council of Elected Officials); agencies in adjacent municipalities which may be affected by the proposed activity, or other technical agencies or organizations which may undertake additional studies or investigations.
d. Non-receipt of comments from state agencies and commissions listed in subdivision 10.1b and c above within the prescribed time shall neither delay nor prejudice the decision of the Agency.
e. For an application for which a public hearing is held, public comments, evidence and testimony.

10.2 Criteria for Decision. In carrying out the purposes and policies of sections 22a-36 to 22a-45, inclusive, of the Connecticut General Statutes, including matters relating to regulating, licensing and enforcing of the provisions thereof, the Agency shall take into consideration all relevant facts and circumstances, including but not limited to:

a. the environmental impact of the proposed regulated activity on wetlands or watercourses;
b. the applicant's purpose for, and any feasible and prudent alternatives to, the proposed regulated activity which alternatives would cause less or no environmental impact to wetlands or watercourses.
c. the relationship between the short term and long term impacts of the proposed regulated activity on wetlands or watercourses and the maintenance and enhancement of long-term productivity of such wetlands or watercourses.
d. Irreversible and irretrievable loss of wetland or watercourse resources which would be caused by the proposed regulated activity, including the extent to which such activity would foreclose a future ability to protect, enhance or restore such resources, and any mitigation measures which may be considered as a condition of issuing a permit for such activity including, but not limited to, measures to (1) prevent or minimize pollution or other environmental damage, (2) maintain or enhance existing environmental quality, or (3) in the following order of priority: restore, enhance and create productive wetland or watercourse resources;
e. the character and degree of injury to, or interference with, safety, health or the reasonable use of property which is caused or threatened by the proposed regulated activity; and
f. impacts of the proposed regulated activity on wetlands or watercourses outside the area for which the activity is proposed and future activities associated with or reasonably related to, the proposed regulated activity which are made inevitable by the proposed regulated activity and which may have an impact on wetlands and watercourses.

10.3 In the case of an application which received a public hearing pursuant to a finding by the Agency that the proposed activity may have a significant impact on wetlands or watercourses, a permit shall not be issued unless the Agency finds on the basis of the record that a feasible and prudent alternative does not exist. In making this finding the Agency shall consider the facts and circumstances set forth in subsection 10.2 of this section. The finding and the reasons therefore shall be stated on the record in writing.

10.4 In the case of an application which is denied on the basis of a finding that there may be feasible and prudent alternatives to the proposed regulated activity which have less adverse impact on wetlands or watercourses, the Agency shall propose on the record in writing the types of alternatives which the applicant may investigate provided this subsection shall not be construed to shift the burden from the applicant to prove that he is entitled to the permit or to present alternatives to the proposed regulated activity.

10.5 For purposes of this section, (1) "wetlands and watercourses" includes aquatic, plant or animal life and habitats in wetlands or watercourses, and (2) "habitats" means areas or environments in which an organism or biological population normally lives or occurs.

10.6 A municipal inland wetlands agency shall not deny or condition an application for a regulated activity in an area outside wetlands or watercourses on the basis of an impact or effect on aquatic, plant, or animal life unless such activity will likely impact or affect the physical characteristics of such wetlands or watercourses.

10.7 In reaching its decision on any application after a public hearing, the Agency shall base its decision on the record of that hearing. Documentary evidence or other material not in the hearing record shall not be considered by the Agency in its decision.

10.8 In the case of an application where the applicant has provided written notice pursuant to subsection 7.11c of these regulations, the holder of the restriction may provide proof to the inland wetlands agency that granting of the permit application will violate the terms of the restriction. Upon finding that the requested land use violates the terms of such restriction, the inland wetlands agency shall not grant the permit.

10.9 In the case of an application where the applicant fails to comply with the provisions of subsections 7.11c or 7.11d of these regulations, (1) the party holding the conservation easement or preservation restriction, other than a state agency that holds such restriction, may, not later than fifteen days after receipt of actual notice of permit approval, file an appeal with the inland wetland agency, subject to the rules and regulations of such agency relating to appeals. The inland wetlands agency shall reverse the permit approval upon a finding that the requested land use violates the terms of such restriction or (2) the state agency that holds such restriction may, not later than thirty days after receipt of actual notice of permit approval, file an appeal with the inland wetlands agency, subject to the rules and regulations of such agency relating to appeals. The inland wetland agency shall immediately reverse such permit approval if the Commissioner of the state agency that holds such restriction certifies that the land use authorized in such permit violates the terms of such conservation or preservation restriction.

10.10 Nothing in these subsections 7.11c or 7.11d of these regulations shall be construed to prohibit the filing of a permit application or to require such written notice when the activity that is the subject of such permit application will occur on a portion of property that is not restricted under the terms of such conservation or preservation restriction.

Section 11
Decision Process and Permit

11.1 The Agency, or its duly authorized agent acting pursuant to Section 12 of these regulations, may, in accordance with Section 10 of these regulations, grant the application as filed or grant it upon other terms, conditions, limitations or modifications of the regulated activity designed to carry out the purposes and policies of the Act, or deny the application**.** Such terms may include any reasonable measures which would mitigate the impacts of the regulated activity and which would (a) prevent or minimize pollution or other environmental damage, (b) maintain or enhance existing environmental quality, or (c) in the following order of priority: restore, enhance and create productive wetland or watercourse resources. Such terms may include restrictions as to the time of year in which a regulated activity may be conducted, provided the Agency, or its agent, determines that such restrictions are necessary to carry out the policy of sections 22a-36 to 22a-45, inclusive, of the Connecticut General Statutes.

11.2 No later than sixty-five (65) days after receipt of an application, the Agency may hold a public hearing on such application. At such hearing any person or persons may appear and be heard and may be represented by agent or attorney. The hearing shall be completed within thirty-five (35) days of its commencement. Action shall be taken on applications within thirty-five (35) days after completion of a public hearing. In the absence of a public hearing, action shall be taken on applications within sixty-five (65) days from the date of receipt of the application. The applicant may consent to one or more extensions of the periods specified in this subsection, provided the total extension of all such periods shall not be for longer than sixty-five (65) days, or may withdraw the application. The failure of the Agency to act within any time period specified in this subsection, or any extension thereof, shall not be deemed to constitute approval of the application. An application deemed incomplete by the Agency shall be withdrawn by the applicant or denied by the Agency.

11.3 The Agency shall state upon its record the reasons and bases for its decision.

11.4 The Agency shall notify the applicant and any person entitled to such notice of its decision within fifteen (15) days of the date of the decision by certified mail, return receipt requested, and the Agency shall cause notice of its order in the issuance or denial of the permit, to be published in a newspaper having general circulation in the town wherein the inland wetland or watercourse lies. In any case in which such notice is not published within such fifteen day period, the applicant may provide for the publication of such notice within ten days thereafter.

11.5 If an activity authorized by an inland wetland permit also involves an activity which requires a zoning or subdivision approval, special zoning permit, or variance or special exception, under sections 8-3(g), 8-3c, or 8-26 of the Connecticut General Statues, the Agency shall file a copy of the decision and report on the application with the Town of Darien Planning and Zoning Commission within fifteen days of the date of the decision thereon.

11.6 Any permit issued by the Agency for the development of land for which an approval is required under section 8-3, 8-25 or 8-26 chapter 124, 124b, 126 or 126a of the Connecticut General Statutes shall be valid until the approval granted under such chapter expires or for ten years, whichever is earlier. Any permit issued by the Agency for any for which an approval is not required under chapter 124, 124b, 126 or 126a activity shall be valid for not less than two years and not more than five years.

11.6.1 Notwithstanding the provisions of Section 11.6 of these regulations, any permit issued by the Agency prior to July 1, 2001 that was in effect and did not expire prior to May 9, 2011 shall be valid for a period not less than nine years after the date of such approval.

11.7 No permit issued by the Agency shall be assigned or transferred without the written permission of the Agency.

11.8 If a bond or insurance is required in accordance with section 13 of these regulations, the Agency may withhold issuing the permit until such bond or insurance is provided.

11.9 General provisions in the issuance of all permits:

a. The Agency has relied in whole or in part on information provided by the applicant and if such information subsequently proves to be false, deceptive, incomplete or inaccurate, the permit may be modified, suspended or revoked.
b. All permits issued by the Agency are subject to and do not derogate any present or future rights or powers of the Agency or the Town of Darien, and convey no rights in real estate or material nor any exclusive privileges, and are further subject to any and all public and private rights and to any federal, state, and municipal laws or regulations pertinent to the subject land or activity.
c. If the activity authorized by the Agency's permit also involves an activity which requires zoning or subdivision approval, special permit, variance or special exception under sections 8.3(g), 8-3c, or 8-26 of the Connecticut General Statutes, no work pursuant to the wetland permit may begin until such approval is obtained.
d. In constructing the authorized activities, the permittee shall implement such management practices consistent with the terms and conditions of the permit as needed to control storm water discharges and to prevent erosion and sedimentation and to otherwise prevent pollution of wetlands and watercourses.
e. Permits are not transferable without the prior written consent of the Agency.

Section 12
Action by Duly Authorized Agent

12 .1 The Agency may delegate to its duly authorized agent the authority to approve or extend a license for an activity that is not located in a wetland or watercourse when such agent finds that the conduct of such activity would result in no greater than a minimal impact on any wetlands or watercourses provided such agent has completed the comprehensive training program developed by the Commissioner of Environmental Protection pursuant to section 22a-39 of the Connecticut General Statutes. Requests for such approval shall be made on a form provided by the Agency and shall contain the information listed under Section 7.5 of these regulations and any other information the Agency may reasonably require. Notwithstanding the provisions for receipt and processing applications prescribed in Sections 8, 9 and 11 of these regulations, such agent may approve or extend such an activity at any time.

12.2 Any person receiving such approval from such agent shall, within ten days of the date of such approval, publish, at the applicant's expense, notice of the approval in a newspaper having a general circulation in the town wherein the activity is located or will have an effect. Any person may appeal such decision of such agent to the Agency within fifteen days after the publication date of the notice and the Agency shall consider such appeal at its next regularly scheduled meeting provided such meeting is no earlier than three business days after receipt by such Agency

or its agent of such appeal. Any person may appear and be heard at the meeting held by the Agency to consider the subject appeal. The Agency shall, at its discretion, sustain, alter, or reject the decision of its agent or require an application for a permit in accordance with Section 7 of these regulations.

Section 13
Bond and Insurance

13.1 The Agency may require as a permit condition the filing of a bond with such surety in such amount and in a form approved by the Agency.

13.2 The bond or surety shall be conditioned on compliance with the provisions of these regulations and the terms, conditions and limitations established in the permit.

Section 14
Enforcement

14.1 The Agency may appoint an agent or agents to act in its behalf with the authority to issue notices of violation or cease and desist orders and carry out other actions or investigations necessary for the enforcement of these regulations. In carrying out the purposes of this section, the Agency or its duly authorized agent shall take into consideration the criteria for decision under section 10.2 of these regulations.

14.2 The Agency or its agent may make regular inspections at reasonable hours of all regulated activities for which permits have been issued with the consent of the property owner or the authorized agent of the owner during the life of the permit.

14.3 In the case in which a permit has not been issued or a permit has expired, the Agency or its agent may make regular inspections at reasonable hours with the consent of the property owner or the authorized agent of the property owner.

14.4 If the Agency or its duly authorized agent finds that any person is conducting or maintaining any activity, facility or condition which is in violation of the Act or these regulations, the Agency or its duly authorized agent may:

a. issue a written order by certified mail, return receipt requested, to such person conducting such activity or maintaining such facility or condition to immediately cease such activity or to correct such facility or condition. Within ten (10) calendar days of the issuance of such order the Agency shall hold a hearing to provide the person an opportunity to be heard and show cause why the order should not remain in effect. The Agency shall consider the facts presented at the hearing and within ten (10) days of the completion of the hearing notify the person by certified mail that the original order remains in effect, that a revised order is in effect, or that the order has been withdrawn. The Agency shall publish notice of its decision in a newspaper having general circulation in the municipality. The original order shall be effective upon issuance and shall remain in effect until the Agency affirms, revises or withdraws the order. The issuance of an order pursuant to this subsection shall not delay or bar an action pursuant to section 22a-44(b) of the Connecticut General Statutes, as amended.
b. issue a notice of violation to such person conducting such activity or maintaining such facility or condition, stating the nature of the violation, the jurisdiction of the Agency, and prescribing the necessary action and steps to correct the violation including, without

limitation, halting work in wetlands or watercourses. The Agency may request that_the individual appear at the next regularly scheduled meeting of the Agency to discuss the unauthorized activity, and/or provide a written reply to the notice or file an application for the necessary permit. Failure to carry out the action(s) directed in a notice of violation may result in issuance of the order provided in section 14.3.a or other enforcement proceedings as provided by law.

14.5 The Agency may suspend or revoke a permit if it finds that the permittee has not complied with the terms, conditions or limitations set forth in the permit or has exceeded the scope of the work as set forth in the application including application plans. Prior to revoking or suspending any permit, the Agency shall issue notice to the permittee, personally or by certified mail, return receipt requested, setting forth the facts or conduct which warrants the intended action. The Agency shall hold a hearing to provide the permittee an opportunity to show that it is in compliance with its permit and any and all requirements for retention of the permit. The permittee shall be notified of the Agency's decision to suspend, revoke, or maintain a permit by certified mail within fifteen (15) days of the date of its decision. The Agency shall publish notice of the suspension or revocation in a newspaper having general circulation in the municipality.

Section 15
Amendments

15.1 These regulations and the "Regulated Wetlands and Watercourses" map for the Town of Darien may be amended, from time to time, by the Agency in accordance with changes in the Connecticut General Statutes or regulations of the Connecticut Department of Energy & Environmental Protection, or as new information regarding soils and inland wetlands and watercourses becomes available.

15.2 An application filed with the Agency which is in conformance with the applicable inland wetlands regulations as of the date of the receipt of such application shall not be required thereafter to comply with any change in inland wetland regulations, including changes to setbacks and buffers, taking effect on or after the date of such receipt and any appeal from the decision of such Agency with respect to such application shall not be dismissed by the Superior Court on the grounds that such a change has taken effect on or after the date of such receipt. The provisions of this section shall not be construed to apply (1) to the establishment, amendment or change of boundaries of inland wetlands or watercourses or (2) to any change in regulations necessary to make such regulations consistent with the provisions of the Act as of the date of such receipt.

15.3 These regulations shall be amended in the manner specified in section 22a-42a of the Connecticut General Statutes, as amended. The Agency shall provide the Commissioner of Environmental Protection with a copy of any proposed regulations and notice of the public hearing to consider any proposed regulations or amendments thereto, except map amendments, at least thirty-five days before the public hearing on their adoption.

15.4.1 Petitions requesting changes or amendments to the "Regulated Wetlands and Watercourses" map, Darien, Connecticut, shall contain at least the following information:

a. the petitioner's name, mailing address and telephone number;
b. the address, or location, of the land affected by the petition;
c. the petitioner's interest in the land affected by the petition

d. map(s) showing the geographic location of the land affected by the petition and the existing and the proposed wetland(s) and watercourse(s) boundaries on such land in accurate detail together with the documentation supporting such proposed boundary locations; and
e. the reasons for the requested action.

15.5 Any person who submits a petition to amend the "Regulated Wetlands and Watercourses" map, Darien, Connecticut, shall bear the burden of proof for all requested map amendments. Such proof may include, but is not limited to, professional interpretation of aerial photography and remote sensing imagery, resource mapping, soils mapping, or other information acceptable to the Agency. If such person is the owner, developer or contract purchaser of the land which is the subject of the petition, or if such person is representing the interests of such an owner, developer or purchaser, in addition to the information required in subsection 15.4, the petition shall include:

a. the name, mailing address and telephone number of the owner(s) of such land and owner(s) agent or other representative;
b. the names and mailing addresses of the owners of abutting land;
c. documentation by a soil scientist of the distribution of wetland soils on said land. Such documentation shall at a minimum include the report of the soil scientist documenting the location of wetland soils on the land and a map of the said land indicating the flag locations set by the soil scientist and defining the boundaries of wetland soil types; and
d. map(s) showing any proposed development of the land in relation to existing and proposed wetland and watercourse boundaries.

15.6 Watercourses shall be delineated by a soil scientist, geologist, ecologist or other qualified individual.

15.7 A public hearing shall be held on petitions to amend the "Regulated Inland Wetlands and Watercourses" map. Notice of the hearing shall be published in a newspaper having a general circulation in the municipality where the land that is the subject of the hearing is located at least twice at intervals of not less than two days, the first not more than fifteen days, nor less than ten days, and the last not less than two days before the date set for the hearing. All materials including maps and documents relating to the petition shall be open for public inspection.

15.8 The agency shall hold a public hearing on a petition to amend the regulations and the "Regulated Inland Wetlands and Watercourses" map within sixty-five days after receipt of such petition. The hearing shall be completed within thirty-five days after commencement. The agency shall act upon the changes requested in such petition within sixty-five days after completion of such hearing. At such hearing, any person or persons may appear and be heard and may be represented by agent or attorney. The petitioner may consent to one or more extensions of any period specified in this subsection, provided the total extension of all such periods shall not be for longer than sixty-five days, or may withdraw such petition. Failure of the agency to act within any time period specified in this subsection or any extension thereof, shall not be deemed to constitute approval of the petition.

15.9 The Agency shall make its decision and state, in writing, the reasons why the change in the Inland Wetlands and Watercourses Map was made.

Section 16
Appeals

16.1 Appeal on actions of the Agency shall be made in accordance with the provisions of section 22a-43 of the Connecticut General Statutes, as amended.

16.2 Notice of such appeal shall be served upon the Agency and the Commissioner of Environmental Protection.

Section 17
Conflict and Severance

17.1 If there is a conflict among the provisions of these regulations, the provision which imposes the most stringent standards for the use of wetlands and watercourses shall govern. The invalidity of any word, clause, sentence, section, part, subsection, subdivision or provision of these regulations shall not affect the validity of any other part which can be given effect without such invalid part or parts.

17.2 If there is a conflict between the provisions of these regulations and the provisions of the Act, the provisions of the Act shall govern.

Section 18
Other Permits

18.1 Nothing in these regulations shall obviate the requirements for the applicant to obtain any other assents, permits or licenses required by law or regulation by the Town of Darien, the State of Connecticut or the Government of the United States including any approval required by the Connecticut Department of Energy & Environmental Protection and the U.S. Army Corps of Engineers. Obtaining such assents, permits or licenses is the sole responsibility of the applicant.

Section 19
Fees

19.1 Method of Payment. All fees required by these regulations shall be submitted to the Agency by check or money order payable to the Town of Darien at the time the application is filed with the Agency.

19.2 No application shall be granted or approved by the Agency unless the correct application fee is paid in full or unless a waiver has been granted by the Agency pursuant to subsection 19.5 of these regulations.

19.3 The application fee is not refundable.

19.5 Waiver. The applicant may petition the Agency to waive, reduce or allow delayed payment of the fee. Such petitions shall be in writing and shall state fully the facts and circumstances the Agency should consider in its determination under this subsection. The Agency may waive all or part of the application fee if the Agency determines that:

a. The activity applied for would clearly result in a substantial public benefit to the environment or to the public health and safety and the applicant would reasonably be deterred from initiating the activity solely or primarily as a result of the amount of the application fee, or
b. The amount of the application fee is clearly excessive in relation to the cost to the Town for reviewing and processing the application.
c. The applicant has shown good cause.

The Agency shall state upon its record the basis for all actions under this subsection.

Section 20
Effective Date of Regulations

20.1 These regulations are effective upon filing in the Office of the Town Clerk and publication of a notice of such filing in a newspaper having general circulation in the Town of Darien.

APPENDIX A

Connecticut General Statute section 1-1(q)

Except as otherwise specifically defined, the words “agriculture” and “farming” shall include cultivation of the soil, dairying, forestry, raising or harvesting any agricultural or horticultural commodity, including the raising, shearing, feeding, caring for, training and management of livestock, including horses, bees, poultry, fur-bearing animals and wildlife, and the raising or harvesting of oysters, clams, mussels, other molluscan shellfish or fish; the operation, management, conservation, improvement or maintenance of a farm and its buildings, tools and equipment, or salvaging timber or cleared land of brush or other debris left by storm, as an incident to such farming operations; the production or harvesting of maple syrup or maple sugar, or any agricultural commodity, including lumber, as an incident to ordinary farming operations or the harvesting of mushrooms, the hatching of poultry, or the construction, operation or maintenance of ditches, canals, reservoirs or waterways used exclusively for farming purposes; handling, planting, drying, packing, packaging, processing, freezing, grading, storing or delivering to storage or to market, or to a carrier for transportation to market, or for direct sale any agricultural or horticultural commodity as an incident to ordinary farming operations, or, in the case of fruits and vegetables, as an incident to the preparation of such fruits or vegetables for market or for direct sale. The term “farm” includes farm buildings, and accessory buildings thereto, nurseries, orchards, ranges, greenhouses, hoophouses and other temporary structures or other structures used primarily for the raising and, as an incident to ordinary farming operations, the sale of agricultural or horticultural commodities. The term “aquaculture” means the farming of the waters of the state and tidal wetlands and the production of protein food, including fish, oysters, clams, mussels and other mulluscan shellfish, on leased, franchised and public underwater farm lands. Nothing herein shall restrict the power of a local zoning authority under chapter 124.

APPENDIX B

Connecticut General Statute section 8-7d

Hearings and decisions. Time limits. Day of receipt. Notice to adjoining municipality. (a) In all matters wherein a formal petition, application, request or appeal must be submitted to a zoning commission, planning and zoning commission or zoning board of appeals under this chapter, a planning commission under chapter 126 or an inland wetlands agency under chapter 440 and a hearing is required or otherwise held on such petition, application, request or appeal, such hearing shall commence within sixty-five days after receipt of such petition, application, request or appeal and shall be completed within thirty-five days after such hearing commences, unless a shorter period of time is required under this chapter, chapter 126 or chapter 440. Notice of the hearing shall be published in a newspaper having a general circulation in such municipality where the land that is the subject of the hearing is located at least twice, at intervals of not less than two days, the first not more than fifteen days or less than ten days and the last not less than two days before the date set for the hearing. In addition to such notice, such commission, board or agency may, by regulation, provide for notice to persons who own or occupy land that is adjacent to the land that is the subject of the hearing. All applications and maps and documents relating thereto shall be open for public inspection. At such hearing, any person or persons may appear and be heard and may be represented by agent or by attorney. All decisions on such matters shall be rendered within sixty-five days after completion of such hearing, unless a shorter period of time is required under this chapter, chapter 126 or chapter 440. The petitioner or applicant may consent to one or more extensions of any period specified in this subsection, provided the total extension of all such periods shall not be for longer than sixty-five days, or may withdraw such petition, application, request or appeal.

(b) Notwithstanding the provisions of subsection (a) of this section, whenever the approval of a site plan is the only requirement to be met or remaining to be met under the zoning regulations for any building, use or structure, a decision on an application for approval of such site plan shall be rendered within sixty-five days after receipt of such site plan. Whenever a decision is to be made on an application for subdivision approval under chapter 126 on which no hearing is held, such decision shall be rendered within sixty-five days after receipt of such application. Whenever a decision is to be made on an inland wetlands and watercourses application under chapter 440 on which no hearing is held, such decision shall be rendered within sixty-five days after receipt of such application. The applicant may consent to one or more extensions of such period, provided the total period of any such extension or extensions shall not exceed sixty-five days or may withdraw such plan or application.

(c) For purposes of subsection (a) or (b) of this section and section 7-246a, the date of receipt of a petition, application, request or appeal shall be the day of the next regularly scheduled meeting of such commission, board or agency, immediately following the day of submission to such commission, board or agency or its agent of such petition, application, request or appeal or thirty-five days after such submission, whichever is sooner. If the commission, board or agency does not maintain an office with regular office hours, the office of the clerk of the municipality shall act as the agent of such commission, board or agency for the receipt of any petition, application, request or appeal.

(d) The provisions of subsection (a) of this section shall not apply to any action initiated by any zoning or planning and zoning commission regarding adoption or change of any zoning regulation or boundary.

(e) Notwithstanding the provisions of this section, if an application involves an activity regulated pursuant to sections 22a-36 to 22a-45, inclusive, and the time for a decision by a zoning commission or planning and zoning commission established pursuant to this section would elapse prior to the thirty-fifth day after a decision by the inland wetlands agency, the time period for a decision shall be extended to thirty-five days after the decision of such agency. The provisions of this subsection shall not be construed to apply to any extension consented to by an applicant or petitioner.

(f) The zoning commission, planning commission, zoning and planning commission, zoning board of appeals or inland wetlands agency shall notify the clerk of any adjoining municipality of the pendency of any application, petition, appeal, request or plan concerning any project on any site in which: (1) Any portion of the property affected by a decision of such commission, board or agency is within five hundred feet of the boundary of the adjoining municipality; (2) a significant portion of the traffic to the completed project on the site will use streets within the adjoining municipality to enter or exit the site; (3) a significant portion of the sewer or water drainage from the project on the site will flow through and significantly impact the drainage or sewerage system within the adjoining municipality; or (4) water runoff from the improved site will impact streets or other municipal or private property within the adjoining municipality. Such notice shall be made by certified mail, return receipt requested, and shall be mailed within seven days of the date of receipt of the application, petition, request or plan. Such adjoining municipality may, through a representative, appear and be heard at any hearing on any such application, petition, appeal, request or plan.